VOLUME II NUMBER I

23592
94 Lu

THE ELEMENTARY SCHOOL TEACHER
AND
THE COURSE OF STUDY

JULY, 1901

LECTURES AND LESSONS UPON THE PHILOSOPHY OF EDUCATION.

FRANCIS W. PARKER.

NOTE.—In order to make clear the main discussion of the philosophy of education, a brief sketch of the history of education will be given.

I. *The common schools of America.*—(1) The purpose in the minds of the founders of the republic. (2) The period of inception. (3) State of the country; opposition to free education. (4) The country school. (5) The city school. (6) The academy.

II. *Period of organization.*—(1) Condition of schools in 1837; attitude of the people. (2) Subjects of study, text-books, methods of teaching. (3) The teachers: dame, hedgerow, young college students, young women from the district schools; double-headed schools.

III. *The Connecticut movement.*—(1) Henry Barnard. (2) Woodbridge. (3) Gallaudet. (4) The *Connecticut School Journal.* (5) In Massachusetts: James G. Carter; Hall; Russell. (6) Admission of girls to public schools. (7) Bell and Lancastrian system. (8) A cheap plan for poor people. (9) Crowding of masses of children in one room. (10) Monitorial system. (11) Establishment of primary schools, 1821.

IV. *Horace Mann.*—(1) Early life: (*a*) struggle for education; (*b*) becomes a lawyer; (*c*) interest in education. (2) Establishment of the Massachusetts Board of Education: (*a*) Horace Mann made secretary of the board, 1837; (*b*) gives up hopes of power, honor, and wealth to devote himself to common schools. (3) Canvass of the commonwealth for free schools: (*a*) going to the people; (*b*) poverty of the people; (*c*) extreme reluctance to vote money for free schools; (*d*) opposition of the academies; (*e*) Horace

Mann's eloquence; (*f*) his annual reports. (4) Visit to Europe, 1837: (*a*) his desire to find help; (*b*) Seventh Annual Report, demands: (α) *humane treatment for children;* (β) *better methods of teaching children to read;* (γ) improvement in training children to spell; (*c*) conflict with the Boston masters. (5) Founding of normal schools, 1839: (*a*) all progress to come from trained teachers; (*b*) the initial work of the normal schools; (*c*) spread of normal schools: (α) David P. Page.

V. *Teachers' organizations.*—(1) American Institute of Instruction. (2) Teachers College. (3) The National Educational Association. (4) The teachers' institute. (5) Educational journals.

VI. *Educational progress in the West.*—(1) Cleveland—Rickoff. (2) Indianapolis—Shortridge. (3) Improved methods in teaching reading.

VII. *Introduction of natural science and the new geography.*—(1) Agassiz. (2) Guyot.

VIII. *The coming of the kindergarten.*—(1) Elizabeth Peabody. (2) Susan Blow. (3) Mrs. Quincy A. Shaw. (4) Mrs. Alice H. Putnam. (5) What the kindergarten has brought into the common schools.

IX. *Child study.*—(1) Physiological psychology: (*a*) G. Stanley Hall. (2) Child-study organizations. (3) Child study has brought knowledge of: (*a*) defectives, and how to treat them; (*b*) the fact that causes of dulness and backwardness are physical; (*c*) the stages of the child's growth; (*d*) the adolescent stage; (*e*) it has brought the studies of instinct; and (*f*) interest in child study on the part of parents.

X. *Higher training of teachers.*—(1) Establishment of chairs of pedagogy in universities. (2) Departments of education in universities. (3) Teachers College, Columbia University.

XI. *The Oswego movement.*—(1) E. A. Sheldon. (2) The beginnings of object-teaching. (3) Oral instruction. (4) Influence of Oswego.

XII. *The hand and the head.*—(1) How manual training entered the common schools. (2) Opposition to manual training. (3) Dr. Salomon's sloyd. (4) Russian methods. (5) Manual training in correlation. (6) The introduction of drawing. (7) Physical training.

XIII. *The income of principles and methods from Germany.*—(1) American students in Europe. (2) Foreign educational literature. (3) Herbart: the Rein school at Jena.

XIV. *Battle for freedom by the German schoolmasters.*—(1) Comenius. (2) Pestalozzi. (3) Diesterweg. (4) Froebel. (5) The conflict between tyranny and liberty. (6) Limitation of ideal.

XV. *Present condition of education in America.*—(1) "The unfinished task." (2) The pressing need—educated, trained teachers. (3) The tendencies of the common school. (4) Shaking off the traditional, mediæval methods. (5) The education adequate to the problem of democratic development. (6) Dr. John Dewey.

REFERENCES.

The following works, which may be found in the library of the School of Education, are recommended for reading in connection with the above survey of education. The Roman numerals correspond to those in the outline:

I. Brooks, *Oldest School in America;* Dillaway, *District School as It Was, By One Who Went to It.*

II. Boone, *Education in the United States;* Hinsdale, *Horace Mann;* Hall, *Teaching a Science: The Teacher an Artist.*

III. *Connecticut Common School Journal;* Monroe, *Henry Barnard;* Steiner, *History of Education in Connecticut;* Gill, *Systems of Education.*

IV. Hughes, *Life of Horace Mann;* Harris, *Horace Mann;* Lang, *Horace Mann: His Life and Educational Work;* Mann, *Report of an Educational Tour in Germany, France, Holland, and Parts of Great Britain and Ireland;* Gordy, *The Normal School Idea in the United States.*

V. Harris, *History of the National Educational Association.*

VI. Hollis, *The Oswego Movement;* Fellow, *School Supervision and Maintenance;* Adams, *Free School System of the United States.*

VII. Gage, *Life of Carl Ritter;* Guyot, *Earth and Man; Life of Agassiz.*

VIII. Froebel, *Pedagogics of the Kindergarten;* Froebel, *Education of Man;* Peabody and Mann, *Kindergarten Guide;* Peabody, *Lectures to Kindergartners.*

IX. Donaldson, *The Growth of the Brain;* Perez, *First Three Years of Childhood;* Chambers, *Infant Education;* Hailmann, *Primary Methods and Kindergarten Instruction;* Wilderspin, *Infant System.*

XIII. Adams, *Herbartian Psychology Applied to Education;* Herbart, *Application of Psychology to Education;* Herbart, *Pädagogik;* Ufer, *Pedagogy of Herbart;* Cousin, *Public Instruction in Prussia;* Rein, *Outlines of Pedagogy;* Hughes, *Froebel's Educational Laws;* Bowen, *Froebel;* Davidson, *Rousseau;* Barnard, *German Pedagogy.*

XIV. Comenius, *Orbis Pictus;* Laurie, *John Amos Comenius;* Cochin, *Pestalozzi;* Krüsi, *Life and Works of Pestalozzi;* Quick, *Educational Reformers.*

XV. Dutton, *Social Phases of Education;* Butler, *The Meaning of Education;* Dewey, *The School and Society;* Parker, *Talks on Pedagogics;* Patridge, *The Quincy Methods;* Fitch, *Notes on American Schools and Colleges;* McMurry, *General Method;* Zimmern, *Methods of Education in America;* Adams, *Contributions to American Educational History;* Parker, *Talks on Teaching;* Spalding, *Education and the Higher Life.*

SYLLABUS OF LECTURES AND LESSONS UPON THE PHILOSOPHY OF EDUCATION.

I.

THE purpose of the following discussion is to examine existing educational aims and methods, and to establish the following propositions:

1. Education should be the evolution of self-government.

2. Social duties and responsibilities alone develop the habits and character essential to citizenship.

3. The school should be an ideal community, and every pupil should, to the best of his ability, exercise the functions of citizenship.

4. The evolution of citizenship and the growth of the ideal community demand complete physical, mental, and moral activities on the part of each pupil. Community life demands examination into its present conditions, its history and possibilities; it demands that knowledge which is needed to realize those possibilities — that skill which puts knowledge into life — that morality which actively holds the good of others as the supreme motive. Under no other ideal is it possible for a human being to appreciate the necessity of complete living and of earnest study.

5. The ideal of community life is the only ideal adapted to the nature of the child in the kindergarten, and to children and students of all grades; in fact, to all human life. It is the ideal that appeals most strongly to young children, and which is in itself capable of expansion as the child develops and civilization advances.

6. The ideal of community life is the one ideal that is intrinsically moral and practically religious.

II. APPEAL TO COMMON-SENSE.

An attempt to formulate practically the true and universal opinion in regard to the ideal of human character.

What do we want in our children?

1. *Health.*— Physical, mental, and moral soundness. (*a*) Body: a vigorous, healthy body; a body fully responsive to the soul; a complete instrument of the will. (*b*) A body that can ward off or conquer disease.

2. *Cheerfulness.*— Courage to live without complaining, to endure, to overcome, to cultivate a habit of cheerfulness under all circumstances. Habitual cheerfulness implies health, and contributes to the health of body, mind, and soul.

3. *Helpfulness.*— Contributing to the welfare of all. (*a*) Fundamental: Habitual helpfulness is the intrinsic quality of complete living. (*b*) Prerequisites: True helpfulness requires knowledge, tact, and skill. (*c*) Aim: True helpfulness penetrates the real needs of the family, the community, the state.

4. *Trustworthiness.*—The characteristic that makes community life possible. (*a*) Qualities: Trustworthiness embraces faithfulness, reliability, skill, and work. (*b*) Cultivation: Trustworthiness is cultivated by responsibility, for home, for society, for the state and nation. The highest feeling of which the human being is capable is responsibility for the welfare of all mankind.

5. *Good taste.*— Love for the true and good and beautiful. (*a*) Discrimination: Good taste gives the power of discrimination between ugliness and beauty, coarseness and refinement, ignorance and culture, baseness and nobility, vice and virtue, evil and good. (*b*) Home value: Good taste makes

home healthful and comfortable; a place where real art dwells in pictures and literature. (*c*) Social value: Good taste demands the best sanitary conditions in the community; beautiful architecture, parks, clean streets, and clean back yards. (*d*) Working value: Good taste is essential in all work. "Art," says Dr. Dewey, "consists in doing anything well."

6. *Vocation.*—That work by which the human being puts into human life the best that is in him. (*a*) Value: The value of a vocation depends upon the quality of the work done, and is measured by its usefulness to man. The inspiration to high quality is helpfulness. (*b*) Skill: The desire to be of use to others determines the quality of all skill. (*c*) Happiness: Usefulness and helpfulness form the basis of true happiness.

7. *Citizenship.*—Character in terms of action. (*a*) Ideal: The true citizen has one dominant ideal, the highest good of his home, his community, his state, his nation, and, through them, of all mankind. (*b*) Action: The true citizen is one whose best thought and action culminate in the spiritual life of man. (*c*) Qualifications: Health, cheerfulness, trustworthiness, good taste, a useful vocation are the essential qualifications for citizenship.

Conclusion.—There is a substantial agreement on the part of intelligent persons upon the essentials of character as here given. All parents desire these qualities in their children, and recognize that they are the elements of good character.

Every institution is judged by its achievements. What institutions have for their fundamental purpose the development of character as here portrayed?

Finally: What we need, that we should have.

III. AN EXAMINATION OF CONDITIONS.

A criticism of educational ideals.

Why are children sent to school?

Answer: "To get knowledge."

This leads to the consideration of three main propositions:

I. Knowledge-getting is the main purpose of conventional education. This is evidenced by the following prevailing conditions:

(*a*) Requirements for promotion from grade to grade are such and such amounts of knowledge. (*b*) The requirements for entrance to high school, college, or university are specified amounts of knowledge. (*c*) Character is not made a test for promotion. (*d*) Life asks: "What can you do?" The college: "What do you know?" (*e*) Courses of study demand definite amounts of knowledge and skill in a certain time. (*f*) Examinations are regarded as measures of knowledge. (*g*) Parents are fascinated with the quantities of knowledge acquired by their offspring. (*h*) Pedantry has fast

hold upon the educational world. (*i*) Knowledge as the end and aim is the controlling ideal in our schools.

II. Knowledge as an end is unscientific and utterly wrong. This is evidenced by the following facts:

1. The field of knowledge is boundless. Knowledge in and of itself, that is, knowledge in the aggregate, affords no criterion whereby a wise selection may be made of what is best for any stage of education.

2. Science is unlimited in its educative possibilities. But scientific knowledge in itself furnishes no guide for a right choice for education.

3. Knowledge of the classics has long been considered necessary for education. (*a*) It is said that the dead languages have intrinsic value for discipline. It is claimed that, although all traces of knowledge of the classics may fade from the mind, still there remains a discipline. Is this an economy of personal energy?

4. The vast majority of pupils do not love knowledge, are not, indeed, interested, and almost all that is learned in school is forgotten, "mental discipline," it is claimed, remaining. A consideration of the means employed to stimulate study throws much light upon sad results. (*a*) Formerly fear drove children to learn their lessons. Now a false aim is set up — rewards, prizes, per cents, diplomas, and degrees. (*b*) Children are led to gain knowledge by the systematic cultivation of selfishness, the root-vice of mankind. (*c*) That such means are necessary to stimulate interest discredits the knowledge-aim in education.

5. Text-books are in general specimens of condensed knowledge — so condensed that interest in the text-book is almost unknown.

6. Most so-called methods are short-cuts to the acquisition of knowledge, the shortest cut being thought the best. Most new methods are repetitions of methods which appear and reappear like the fashions.

7. Most teachers do not study education as a science and teaching as an art. They have a certain amount of knowledge to impart, accompanied by training in reading and number and the modes of expression. The result is routine and monotony.

8. The science of education and the art of teaching are often considered of minor importance by school superintendents, heads of colleges and universities, and by the public. When a business-like way of acquiring knowledge is found, the problem is for them solved, and remains solved.

9. Most discussions and books upon education are apparently aimless; there is a confusion of tongues.

10. The cause of this condition is the ideal of knowledge-getting as the purpose of education. Knowledge-getting limits both method and outlook.

III. The knowledge ideal is the handmaid of despotic government and is an anachronism in an age of self-government. History reveals its origin and causal relations:

1. The first means of keeping the masses in subjection, employed through long ages, was ignorance. The second, more modern, means is an education which limits the learner to subservience to government, whether aristocracy, hierarchy, monarchy, or partisan supremacy; in other words, the knowledge ideal is the potent means of training subjects. It had its origin in mediæval times, and still holds sway. Proofs of this fact are found throughout all modern history. (*a*) The history of Prussian education is the record of a prolonged war between the liberty-loving schoolmaster and a tyrannical government. The children of Prussia were kept from nature study for twenty years because contact with nature would lead them to think for themselves. (*b*) Manual training, or sloyd, was forbidden in Russia for the same reason. (*c*) Kaiser Wilhelm said: "The school ought, first of all, to keep open the duel with democracy." He also said to the heads of the Prussian real schools: "I want you to teach your boys what this government really is."

2. We are trying to educate children into citizenship by means long tried and proved as the best to train subjects.

IV. SUBJECT OR CITIZEN.

Mankind has always been divided into two classes — subjects and citizens.

I. Subject: Characterized by subserviency.

1. *Without self-choice.*—The subject is typified by the good soldier, one who obeys without question, follows because commanded. His duties and responsibilities are put upon him with little or no self-choice.

2. *Without reason.*—The subject is a machine to do the will of others. The higher faculties of the intellect are left in abeyance, are not cultivated; he believes without exercising his own reason.

3. *Causes of subserviency.*—(*a*) Physical fear, fear of corporal punishment, prison, torture, poverty, discomfort. (*b*) Spiritual fear of punishment hereafter. (*c*) Hope of material rewards, home comforts, fame, honor, money. (*d*) Heredity, ancestral environment, that has, seemingly, crushed out the divine spark of selfhood and fostered a selfishness that has become ingrained by countless generations of practice. (*e*) Ages of tyranny in which a few have controlled the many for their own selfish ends. (*f*) Wrong public opinion, a profound and almost universal belief that the vast majority of human beings are not capable of self-choice; that democracy leads to ruin; that despotism alone solves the problems of mankind. The crime of the ages has been a disbelief in the individual. This crime reaches its climax in the disbelief in the divinity of the child.

4. *Subserviency evidenced by history.*—(*a*) Every new idea born into the world that has penetrated man's soul with inspiration and faith has come by the way of the cross, the stake, the prison; through torture, scorn, contempt,

contumely, and general rejection. This is the summation of proof that man is subservient; that tradition holds human beings in a vise. The struggle for freedom encounters ages of ignorance and bigotry. (*b*) It is far easier "to conform to this world than to be transformed" by self-activity "into the newness of light." Hence slow progress. "The blood of the martyrs is the seed of the church." (*c*) The most marked indication of human progress is the lessened time and struggle it takes to put new-found truth into life.

5. *Subjects classified.*—(*a*) Vassal, serf, minion, slave, are terms well understood. (*b*) A partisan without reason or knowledge of principles; a follower who believes and obeys without questioning. (*c*) A man who seeks for fame, money, power, as ends in themselves. (*d*) A teacher who obeys commands without understanding them. (*e*) A devotee of fashion.

II. Citizen: Characterized by rational self-choice.

1. *Highest type.*—The citizen is the noblest type of human being, one whose highest ideal is the good of others in the home, the community, the nation, the world. Hence: (*a*) He has the courage to accept and stand by what he thinks to be right, and to reject that which is wrong, seeking to find the best for his fellow-men. (*b*) In the questions of franchise he seeks to choose competent officers, and to make wholesome, necessary laws. (*c*) He is an earnest, indefatigable student of history and science in order to find that which is best for mankind.

2. *Faith.*—The citizen has an unfailing belief in the infinite possibilities of human growth. Hence: (*a*) He is controlled by his responsibility for his brother-man, and devotes his intellectual powers to the problems of man's salvation. (*b*) He puts his home, his vocation, and all the best there is in him into the improvement of the race.

3. *Franchise.*—The franchise does not of itself make one a citizen. (*a*) A voter may be the most abject slave of public opinion, of corrupt rewards, of desire for fame, of a political boss. (*b*) A non-voter may be an ideal citizen, using her influence and energy for the elevation of man.

4. *Citizen and subject compared.*—(*a*) A subject generally has fixed ideas. A citizen has ideals that cannot be realized in a lifetime.

V. LIBERTY AND FREEDOM.

Liberty and freedom are prime essentials of good citizenship.

1. LIBERTY: THE EXTERNAL CONDITIONS FOR SELF-CHOICE.

1. *Development unhampered.*—(*a*) Perfect liberty means that no obstruction of law, custom, or class distinction stands in the way of the individual's realizing his ideals of right, justice, and progress. (*b*) The franchise is a condition of liberty.

2. *License.*—There is a vast difference between liberty and license. License is the abuse of liberty; it is generally the personal choice, from motives of selfishness, of that which injures others and degrades one's self.

3. *Law.*—(*a*) Good human laws are the means of preventing license. (*b*) Law may hinder the growth of that which should be left to self-choice.

4. *History of liberty.*—The history of liberty is the story of man. (*a*) Love of liberty is one of the deepest, most persistent of human instincts. Ages of tyranny cannot crush it; it has made its way against unrelenting opposition through war, prison, banishment, and death. (*b*) Political liberty has been, and is, feared and dreaded by king and tyrant. When the people think, thrones tremble, and therefore the exercise of this divine right has been made a crime. (*c*) Every great man or woman of the past whom the world loves to remember and reverence was a champion of liberty. (*d*) Every great reform in human history related to the discovery of truth, whether religious, political, or social, has meant the enlargement of personal liberty.

5. *Liberty and government.*—(*a*) Governments have been organized, laws made, armies trained and supported, and even schools conducted chiefly for the perpetuation of fixed forms of government and the suppression of the best in man. (*b*) A great majority of mankind are rooted and grounded in the belief that the masses should not be trusted with liberty nor permitted to think for themselves.

II. FREEDOM: PERFECT OBEDIENCE.

Liberty and freedom are popularly used as synonyms. Philosophically, liberty is a condition, a grant to individuals, made by society, community, or nation. Freedom is entirely a personal matter; it is that which every human being may acquire for himself, through his own personal activity and in no other way.

1. *How gained.*—(*a*) Freedom is gained by obedience to God's laws. Perfect freedom is perfect obedience. The highest of God's laws is the golden rule. (*b*) Freedom may be acquired by strong, courageous individuals without the aid of external liberty. Punishment is generally the result of such freedom. (*c*) The power to acquire freedom depends primarily upon the tribe or the nation, and secondarily upon the individual.

2. *An individual matter.*—(*a*) There are grades and limitations of freedom. Every normal human being possesses a certain amount of freedom. (*b*) A body in any way responsive to the will exemplifies freedom. Skill in trade, business, artifice, and art — power of expression in any mode — facility in doing anything — may be placed to the score of freedom. Every effort in the right direction in obedience to law brings freedom. (*c*) On the other hand, the most prolonged, strenuous, vigorous striving that does not conform to law lames and cripples the being. Working in the law means the support of all natural and divine powers.

3. *Freedom and work.*—The aim of work determines its quality, and quality has much to do with freedom. (*a*) The highest, noblest aim stimulates the strongest, most persistent efforts of body, mind, and soul, and therefore brings the greatest freedom. Any aim below the highest limits freedom. The grandest ideal lights its own way to achievement. (*b*) The power to strive for freedom is the divinest gift of God, the highest glory of man. Man works out his own salvation. He knows the doctrine because he does the will; he creates because he was created to create. He does righteousness and is righteous. Every bit of freedom must be acquired by personal activity, controlled by the highest ideals and governed by God's laws.

III. LIBERTY AND FREEDOM COMPARED.

Liberty is an external political condition. Freedom is an internal personal state.

1. *Effort essential.*—The most favorable external conditions may induce no personal striving for freedom, or only faint attempts in that direction. (*a*) The slaves of the South thought that liberty meant immunity from work, with ease and pleasure. (*b*) The French people, molded by ages of oppression, were wild over liberty, but failed to understand that personal freedom must be gained by working and living for the nation. (*c*) The Germans in the time of the French Revolution were kept from following the French example through love of the Fatherland.

2. *Restrictions necessary.*—Liberty must sometimes be restricted that personal freedom may develop. (*a*) A grave problem of today is whether certain peoples are prepared for liberty. Must they not be educated into liberty? Instance the South American republics; the Philippines. (*b*) The liberty of children must be restricted until they gradually acquire the power of right self-choice, *i. e.*, freedom. (*c*) True education is the acquisition of freedom; it is the development of the right attitude of the mind toward truth.

VI. THE NATURE AND FUNCTION OF ENVIRONMENT.

In popular usage environment and surrounding are synonymous. As biological or educational terms they have different and distinct meanings.

1. *Environment* is the aggregate of causes, external and internal, which influence and change the individual, and from this aggregate very much of the surroundings is excluded. (*a*) Surroundings include sky, earth, vegetation, animals, and man; indeed, all the sources of knowledge, past, present, and future. Environment in the sense of surroundings would have no value as an educational term. The questions in education are: What is the nature of the being to be educated? What affects and influences the being? (*b*) Environment acts upon the mind through the medium of the senses. Waves of ether of a certain length and volume create a knowledge of colors. For

a person congenitally blind there is no environment of color. The effect of external color upon one color-blind is distinctly limited. Waves of ether within the color boundaries are countless; comparatively few of them affect the highest human organization. The knowledge of color is modified and limited by the individual brain, nerve system, and nerve centers. (*c*) The same is true of hearing, touch, and the other senses.

2. *Environment relative.*—(*a*) The nature of individuals determines the influence of environment. Each human being has his own differentiated environment. (*b*) The evolution of sentient beings means primarily the growth of physical organization. At each progressive stage of brain evolution the capacity for being affected by external causes becomes greater. Surroundings change to environment. Instance the savage, who has a very limited environment amid surroundings of endless variety, beauty, and grandeur. (*c*) In the discussion of the value of nature study, authorities point to the natural beauties surrounding savages, and ask why with such opportunities nature does not educate them. The answer is obvious: the limitations of environment are determined by the physical organization.

3. *Educational value.*—The study of environment has an immense educational value. It furnishes the key to the whole subject of teaching and training. (*a*) Environment comprehends all the causes of development. (*b*) The child imitates the language which he hears. Enunciation, pronunciation, idioms, dialect, are all products of imitation. The child's command of language depends upon his power of understanding and using speech. Thus the language environment grows as the child's experience becomes enlarged. (*c*) The child imitates the acts of others, but his power of imitation is limited by his capabilities. (*d*) The environment of public opinion has a controlling influence upon the children. The comprehension of public opinion begins with mere feeling and develops with the mental powers.

4. *Child study.*—(*a*) Child study within the range of the average teacher's opportunity is limited to the investigation of the particular environment of each child. (*b*) Heredity is ancestral environment. (*c*) The study of that which influences the child comprehends the study of the child itself—in other words, the study of a child's environment means the diagnosis of that child. (*d*) Such knowledge makes the conclusions of physiological psychology of substantial assistance in teaching. (*e*) The teacher, though unable to avail himself of a thorough laboratory course in psychology, may yet use with advantage the results of such investigation by others. Instance: The doctrine of the organic circuit (John Dewey). Man a moral being (Münsterberg). Every nerve and nerve center has its functions and capabilities of correlation, its weakness or strength, and its destiny. (*f*) The results of environment in childhood, good or bad, lead to permanent habits. Instance the little boy taken from a crowded, filthy street, having his first experience in the country, who begged to go home where he could enjoy the delightful excitement of the patrol wagon every twenty minutes.

5. *The whole doctrine.*— To know the needs of pupils and to supply them comprises the whole doctrine of education.

VII. RECOGNITION OF SELF.

The child announces his appearance on earth by a demand to be recognized as a human being, endowed with powers of body, mind, and soul.

1. *Self-recognition universal.*— Desire for recognition of self one of the instincts of humanity. Illustrations are countless: (*a*) In children we note baby's smile, delight in learning to speak, walk, dance. Pleasure in showing off new clothing, dresses, first trousers, boots, cloaks, parasols, etc. Prowess in plays and games. Imitating father and mother in their work. Driving horse, baking cakes, sweeping, etc. (*b*) Pride in doing anything that meets with approval, whether good or bad, even distasteful things; learning to chew tobacco, to drink liquor, are disgusting performances in themselves, but the desire to be considered "manly" overcomes disgust. The same is true of swearing. (*c*) Desire to be recognized as somebody common to adults as well as to children. It often becomes more intense as age advances. Orators, actors, and singers are anxious for applause. The author and the artist desire approbation. This anxiety often induces nervous, sensitive, and even morbid states.

2. *Self-recognition and environment.*— The instinct of self-recognition is of potent force in the formation of individual character; its effects, whether good or bad, dependent upon environment; environments intended for good which have a negative or debasing influence. (*a*) A parent with an absorbing love for children may ruin them by an environment not adapted to their needs. (*b*) A teacher with strong sympathies, an earnest desire to do good, may make a wrong environment.

3. *Self-recognition and public opinion.*— Because of the intensity and universality of the instinct of self-recognition, public opinion is the most influential factor of environment.

4. *Self-recognition and the teacher.*— The teacher is an organizer of an ideal community, a creator of public opinion, that shall control the school community. Public opinion must spring from the needs of the individual and of the school, must respond to the higher nature of the child, must be stronger than all other influences. (*a*) If fear be a controlling influence, it leads to repulsion, a disgust for study and subjects of study. (*b*) Love for rewards, per cents, promotion, ungenerous rivalry, defeat all attempts to create a righteous public opinion. Selfishness, the outcome of bribery, disintegrates society. It prevents the subject-matter of study and modes of attention and expression from entering into and influencing character. Compare a 100 per cent. in an examination on the life of Abraham Lincoln with the influence of his life upon the school community. (*c*) The influence of the

teacher may be subverted by the influence of one bad boy. (*d*) Pupils may be made hypocrites in the presence of the teacher, conforming to rules for his approbation. The opinion of the teacher is often the antithesis of the public opinion of the school community. (*e*) Public opinion should demand only the very best from each pupil. Take as an illustration: A self-willed boy, accustomed to much attention at home, enters the kindergarten. The children are playing and working together in harmony. The teacher invites him to join, but he is not accustomed to joining others—heretofore everyone has joined him. He demands attention and applause. The little community moves on with no further notice of the stranger. The boy kicks, roars, refuses to join. No one notices him. Here is something entirely new, and as his usual efforts for recognition become exhausted, he joins and tries a new and better way to gain appreciation. (*f*) Putting responsibility upon pupils a mark of recognition. The bad boy is bad often from the feeling of self-abasement, lack of recognition, with very little to do in school that he likes. Give him some responsibility, and the feeling that he is of value leads him to a respect for public opinion. (*g*) The duties and responsibilities of citizenship have the strongest influence. "I am responsible for the whole school;" "I must do everything to help and nothing to hinder," should be the dominant feelings. (*h*) The child is full of activity. He must have much to do—he will do much, anyway, right or wrong. He will do what public opinion demands. Create a public opinion which demands the best, and it will touch the mainsprings of life; he will feel and understand values.

VIII. DOCTRINE OF INTEREST.

I. IDEAL: THE BASIS OF ACTION.

1. *Act and aim.*—Every voluntary act has a definite end or goal. This proposition is axiomatic and may be variously stated: End or goal means aim, purpose, achievement, etc. (*a*) The end may be readily and immediately attained, or it may require greater or less periods of time for its achievement. It may be a life-work, or it may transcend even the limits of a lifetime. (*b*) Ends and aims differ in value. They may be noble or worse than worthless; may be honorable or dishonorable; may be for the welfare or the injury of mankind. (*c*) The end, or goal, is imaged, conceived in the mind, and held in consciousness as an ideal through successive steps of realization.

2. *Function.*—(*a*) The ideal determines and limits all that enters into its realization. As the architect is guided in his plan and choice of materials by the ultimate use of an edifice, so the ideal held in consciousness determines the means whereby it is realized. (*b*) The higher the aim, the higher the means required to attain it. (*c*) It is the law of nature that only that persists which best serves her purpose, and with the individual only that which serves his end becomes personal to him. Only those means are used

which meet the demand of his ideal aim. The man whose aim is riches assimilates and utilizes only that which pertains to his particular way of gaining money. (*d*) Motive is the desire of realization inspired by the ideal which stimulates the impulse, or series of impulses, prerequisite to such realization. (*e*) Method is the personal way in which one strives to realize an ideal. Method includes all the peculiar personal ways of working to accomplish a purpose; ways of study, expression, reason. (*f*) Self-discipline is the training of the will effected by self-activity in the effort to realize an ideal.

3. *Interest.*—Interest is the emotion, the glow of enthusiasm which accompanies effort to attain an ideal. (*a*) Interest is not synonymous with pleasure. The patriot soldier fighting for his country is not pleased, but is exceedingly interested. (*b*) Interest is a constant factor of consciousness. Everyone is interested in something all of the time.

II. APPLICATION TO EDUCATION.

1. *Self-creative.*—Education is the self-creation of an ideal accompanied by the self-activity required to realize it. All education should be primarily directed to the creation of the right ideal in each individual soul and to the stimulation of right personal motives.

2. *The child's ideal.*—Every child has an ideal of some kind. Ideals may be multifarious. They may undergo constant changes. A settled manner of living tends to the formation of a permanent ideal.

3. *Purpose in work.*—All work or study on the part of the pupil is under the stress of some purpose, stimulated by some ideal.

4. *The one essential.*—Knowledge is to the student the fundamental and absolutely indispensable means of realizing his ideal.

5. *Exclusion of extraneous matter.*—The rule holds in education as in nature: only that which serves the end persists. Only such knowledge is assimilated as can be utilized in realizing the individual idea. (*a*) Self-expression, skill, aptitude on the part of the pupil limited to the demands of the ideal. The student acquires only that skill which may be utilized to achieve the end in view. (*b*) The exercise of reason is in general limited to the choice of knowledge and materials and their adaptation to the realization of an ideal.

6. *Concentration.*—Concentration is the bringing to bear of the whole being upon the realization of an ideal; the will, the reason, and all the powers of the mind; knowledge and material, method, study, and self-expression.

7. *Correlation.*—(*a*) Correlation is the direct outcome of concentration. It is the selection of that knowledge best adapted to the realization of an ideal without regard to the classification of knowledge. (*b*) Correlation is the absolute rule in all the businesses and arts of life, and education should not be an exception. It is the simple, common-sense method of choosing and using that which is best adapted to the work to be done.

8. *Methods of teaching.*—(*a*) All effective methods are self-creations. (*b*) No one can use the method of another successfully without an adequate conception of the ideal which was the inspiration of the particular method. Mere imitation of a method of teaching discredits the ideal.

9. *What ideal or ideals should children have?*—(*a*) The ideal to which the whole being responds. The ideal that is adapted to every individual child and to every stage of human development. (*b*) The ideal that demands the largest scope and amount of knowledge; the greatest exercise of the will-power, of discipline, of reason, of concentration and correlation. (*c*) The ideal of which mankind is in greatest need. What is the ideal?

IX. THE RECITATION—ITS FUNCTION, METHOD, AND MOTIVE.

I. FUNCTION (USE IN THE EDUCATIONAL SCHEME).

1. *Aim of teacher and pupil identical.*—(*a*) The function of the recitation for both teacher and pupil is to assist to the extent of their abilities every member of the class in educative thought and expression; to efficiently aid everyone in the class in the acquisition of knowledge, thought, and power; in the cultivation of the reasoning faculties; and, above all, in enhancing the desire to help others. (*b*) In other words, the function of the recitation is to utilize the time and the powers of the teacher, and each and every pupil, to the best advantage of all; to fully exercise the whole being—mind, body, and soul—in the most profitable manner, in the time allotted.

II. METHOD—ORDERED PROCEDURE.

The fundamental law of all education should be rigidly observed—that of self-activity. The right method stimulates original personal activity.

1. *Attention essential.*—Attention to the subject in hand, and to the action of the minds of the teacher and of every pupil, is an absolute requisite. (*a*) Listen assiduously to every word said, and observe closely everything done. (*b*) Strive to understand all statements and propositions made. (*c*) Weigh and judge fairly and honestly the thoughts of each speaker.

2. *Genuineness to be cultivated.*—(*a*) Teacher and pupil must lay bare their own minds through a genuine expression of that which they believe to be true, or through an honest and courageous expression of doubts. (*b*) Never hesitate to reveal your own ignorance of a subject or of a detail. Express clearly your own personal difficulties in striving to discover the truth. (*c*) Constantly cultivate the art of questioning; ask those questions only which will help a classmate to form better images, and make proper inferences. (*d*) Each pupil should make his own inferences. Facts, knowledge, to help original judgments, should be freely given. A fact that is not directly used in reasoning, drawing inferences, is useless. (*e*) Be ready at any moment to give facts and state your own original inferences, and to appreciate the

statements of others. Distribute to the class the products of your study and investigation, keeping ever in mind the needs of your classmates as well as your own.

3. *Hypocrisy to be avoided.*— Hypocrisy, the antithesis of genuineness, is sometimes systematically cultivated in recitations. A strong habit of concealing one's true self is thus formed — a habit to overcome which takes prolonged, vigorous, and persistent efforts of the will. The pupil should be led to avoid the following too common faults: (*a*) Conforming implicitly to the knowledge, opinions, and belief of the teacher, thus cultivating a shrewdness, a servility in imitation, that leaves all originality in abeyance. (*b*) Holding a high per cent. as the chief end of all school efforts. (*c*) Struggling to get the best of classmates simply in order to stand at the head. (*d*) Putting the whole mind upon the mere memorizing of words. (*e*) Talking for the sake of talking, or for the purpose of showing off.

4. *Preparation.*—(*a*) All study, investigation, and experiment should be for the direct purpose of assisting the whole class in its work, especially in recitation. (*b*) Laboratory, field, and library work are, in general, personal studies in striving to solve problems by the use of material and apparatus with the least possible assistance. The teacher presents the problems and gives only that aid which stimulates, and economizes self-activity or personal effort. (*c*) The recitation, however, is essentially laboratory work extended; in recitation the problems are not solved by use of materials, or by the study of books. All the problems of recitation are of *mind*, solved by the close study of the different thought-manifestations; by understanding the phase of thought, the varying experiences, the personal efforts, the mistakes and successes of individuals. Every lesson will leave problems unsolved, which impel one to new or renewed experiments, to investigations by observations, and to the study of text in order to bring fresh resources to the class in the succeeding recitation.

III. MOTIVE STIMULATING DESIRE.

The motive in recitation, as in all action, is the desire to realize an ideal. The motive of seeking to assist others in the recitations is the highest possible motive one can have. It leads one to seek for knowledge for the purpose of using it, to find the best method for the purpose of helping others; in a word, to strive to be a citizen of an ideal community. The steady and persistent cultivation of this motive in the recitation contributes to the high culture of the individual.

1. *Memory strengthened.*— One's whole store of knowledge in relation to the subject in hand is needed constantly in every discussion. Use of knowledge is the fundamental means of strengthening memory.

2. *Knowledge acquired.*— Each pupil in recitation presents a different side of the same question. In trying to help others he feels the necessity for more knowledge. He also knows instinctively the purpose of the knowledge he wishes to gain. Therefore he seeks for it eagerly. Thus preparation for recitation becomes a necessity.

3. *Expression cultivated.*— Expression in all its modes is brought into complete exercise. The pupil wishes to make the teacher and the whole class understand thoroughly his thought, for which purpose he uses speech, writing, drawing, etc.

4. *Physical energy developed.*—The whole body is the instrument of the mind in attention and expression. Prolonged efforts in attention require the health and vigor of the whole body. No merely physical activity is so absorbing of physical energy as prolonged and close attention. The natural attitude of attention must be steadily maintained. The same can be said of expression. Expression requires the constant exercise of physical activity. The direction of this activity is entirely governed by the motive.

5. *Self-consciousness overcome.*—The only possible way to overcome self-consciousness is by the continual exercise of the will in helping others. The mind is absorbed by the question in hand, and the whole being is under control of the will, moving steadily toward its goal. Thus one becomes unconscious of the agents of expression.

X. THE IDEAL AND MOTIVE IN EDUCATION.

Education today should be adapted to the conditions of freedom in a free land. It must, therefore, be dominated by an ideal commensurate with the duties, responsibilities, and spiritual promise of the free man.

I. CITIZENSHIP: THE FLOWERING OF HUMAN CHARACTER.

1. *Ideal.*—The highest type of free man is the citizen, and the ideal of citizenship — of community life — inspires the motives in education that lead to the highest and best results. (*a*) Knowledge ceases to be end and becomes simply the necessary means for realizing the ideal. (*b*) It necessitates a break with tradition and the discarding of methods adapted to holding people in subjection. (*c*) It demands, as an essential of right environment, a healthy public opinion which shall appeal to the instinct of self-recognition and make the school a true community, working out the problems of self-government. (*d*) It vivifies interest and stimulates self-activity in obedience to the law whereby the individual attains freedom. (*e*) It demands the giving of one's powers, body, mind, and soul, for the good of others.

2. *Motive altruistic.*—The motive inspired by the ideal of citizenship is the desire on the part of teacher and pupil to realize immediately that ideal, and the motive is fundamentally and insistently altruistic. The value of the

altruistic motive is evident. (*a*) Acts of selfishness may be admired, but the actors are never loved. Acts of altruism are always met by the love of all mankind, when sufficient time has elapsed for them to be understood and appreciated. By this standard think of the common opinion of Alexander, Cæsar, Napoleon, Washington, Lincoln, Florence Nightingale, Comenius, Pestalozzi, and Froebel. The deepest and profoundest intuitions of man turn unerringly to the altruistic motive. (*b*) The final judgment of all human organizations, church, state, and society, is derived from what an institution has put into this world as an active and eternal good. Such final judgments do not depend upon creed, or forms of government, or constitutions, but upon spiritual results. (*c*) In all our personal friendships our final judgment of friends depends upon our belief in their motives in life. Just so far as the motive is for the good of man does the memory of a friend remain with us as a sweet incense. (*d*) There never was in the history of the world a bit of immortal art, literature, music, poetry, painting, or sculpture, created under the desire for fame or wealth. It is granted that many love truth, in both art and science, for truth's sake, and thus produce very important results, but the highest results come from the inspiration that the work done will be of use to man. (*e*) That this work, whatever it may be, is going into the eternity of human life is the highest incentive to human action. Through living from the altruistic motive, man feels his greatest dignity.

II. PRACTICAL APPLICATION TO TEACHING.

1. *The teacher.*—The educational ideal of citizenship and the resultant altruistic motive make large demands upon the teacher. He becomes a vital social force. He ceases to be a taskmaster and becomes a prophet revealing the way of life. (*a*) The teacher is responsible for the spiritual welfare of each pupil under his charge, and for every child in the never-ending series. The teacher is responsible in a marked degree for society. The school of today is the society of tomorrow. (*b*) An appreciation of this responsibility is the strongest possible incentive to incessant study, acquisition of skill, knowledge of the child, and his needs. (*c*) A profound and growing love for humanity; a faith in infinite possibilities of improvement; a belief in an inexhaustible supply for man's needs; and a recognition of eternal loving laws, lift the teacher's art to the highest place in human economy.

2. *Preparation.*—An appreciation of the tremendous responsibility of a teacher leads to a prolonged and intelligent struggle in preparation. (*a*) The common aim: the shortest cut into the schoolroom through a diploma or examination. (*b*) The common purpose: earning money. (*c*) The common result: poor teaching by an artisan teacher.

3. *Teaching a profession.*—The profession of teaching requires more preparation, moral, intellectual, and professional, than any other. (*a*) Education is the science of all sciences; teaching is the art of all arts. (*b*) Appreciation of the greatness of the art leads a candidate to make every effort,

financial and otherwise, to acquire the art. (*c*) One who has any appreciation of the art, or of the responsibility, of teaching shrinks from entering a school as a teacher.

4. *The teacher a reformer.*—The teacher must have the singleness of purpose and the courage of a reformer. (*a*) The necessity for courage is greatly increased by the exceedingly low state of public opinion in regard to education. It is also increased by the extreme difficulty in overcoming prevailing defective methods; in convincing superintendents and principals that better methods and means should be used. (*b*) The only way to introduce better means and methods is to demonstrate practically their use and superiority. (*c*) Such reforms require great and persistent courage, tact, patience, and self-control, all of which are not possible without a dominating love for humanity.

6. *Love, the key.*—Love for children leads teachers to a close study of individuals, to an appreciation of the good in them, and to an understanding of their evil tendencies. (*a*) There is a false love for children, a superficial sympathy, a pleasure in tricks and manners, a desire to be loved by them which leads to petting and the overdevelopment of precocious instincts. (*b*) A true love for children is the one incentive which impels the teacher to study their natures, to try to understand them, to differentiate one character from another, to comprehend personal needs. (*c*) Love begets patience. Changes in character come about with great slowness. Changes in character mean changes in brain structure, changes in muscles, nerves; indeed, in the whole being. A chronic difficulty, physical, moral, or mental, yields only to constant and well-directed application of the right means to the end. Love alone can find the way. (*d*) Love develops the highest courage, courage to stand between the child and all evil influences, such as badly arranged courses of study, public opinion, unjust demands of parents, ignorant supervision, or the immoral fear of punishment. No one can understand the child's educational needs so well as the teacher.

XI. RELATION OF KNOWLEDGE TO THE EVOLUTION OF CHARACTER.

1. *The educational functions of the mode of attention, observation, hearing language, and reading.*—As mere processes the modes of attention have no intrinsic value. Reading, for instance, may be intellectual dissipation, may be immoral; or, on the other hand, it may lead to moral and mental growth.

2. *The value of mathematics in education* depends fundamentally on the knowledge acquired by measuring. As a mere mental process mathematics is at its lowest value.

3. *The modes of expression* may be moral in their influence upon others, mental in the reaction of expression upon thought, and serve as the reinforcement of the modes of attention. (*a*) Neither modes of expression nor modes of attention have in themselves any intrinsic moral or mental value.

Their value consists entirely in knowlege-getting and -giving, and in the consequent development.

4. *The value of knowledge* consists in its use for the good of man. Self-expression is the use of knowledge. There can be no act of the will without a knowledge basis. Nothing can be done without a basis of knowledge. Development of civilization means the expansion and concentration of knowledge in life. What blood and breath are to the body, that, in a larger sense, knowledge is to the mind.

5. *Knowledge should always be mind-nutrition.*—(*a*) Self-expression makes knowledge nutritious. Through self-expression knowledge is assimilated and correlated, and becomes memory, power, mental and moral life. (*b*) Correlation is focused in expression. (*c*) Teaching adapts to the pupils' minds that knowledge which they need to use immediately. Present good is everlasting good. (*d*) The selection of knowledge to be taught depends entirely upon the needs of pupils, and pupils need only what they use. The use depends upon the demands of their community life. (*e*) The feeling and understanding of the immediate uses of knowledge on the part of the pupil are the strongest stimuli and incentives for study.

6. *The one central subject of study* is creation, its history and its future—creation of nature and of man. (*a*) Creation is ever going on all around us and in us. Everything is changing. Change is controlled by immutable laws. There is no effect without a cause. The study of causes is the study of law, and the study of law is the study of creation. Thus all genuine study is practically religious. (*b*) Knowledge (truth already found) is boundless. Truth yet to be discovered is infinite. There is, therefore, only one guide in the preparation of a course of study: knowledge adapted to the understanding of the learner, knowledge that is nutritious, that is needed for immediate use.

7. *The effect of nature study upon character.*—(*a*) From nature man takes his food, clothing, and shelter. (*b*) Through investigation, experiment, and consequent discovery, geology, physiography, mineralogy, astronomy, meteorology, botany, zoölogy, and the long list of sciences have been found by man for man's use and education. In a half-century most, if not all, sciences have undergone radical change. Changes have been made that amount to revolutions. Subjects that a short time ago were obscure and vague are now rich with facts and replete with interest. (*c*) Knowledge of nature supplies man's material needs and enables him to help his brother-man. (*d*) The study of nature gives rise to emotions of wonder, beauty, grandeur, and sublimity. It is the study of the Creator through his creation, and therefore induces reverence, love, and worship.

8. *Man's influence upon character* is more direct, immediate, and marked. (*a*) The strongest tendency of man is to imitate those around him. The child imitates his mother and other members of the family. Later, public opinion exercises the most powerful influence. (*b*) The child acquires speech,

customs, habits, religious beliefs, party tendencies from his immediate environment. (*c*) The function of history is to enlarge and strengthen public opinion. History should be taught to arouse noble feelings in the soul, to present the grandest examples of manhood. Nature suggests thought, arouses a desire to investigate, to discover laws. The study of nature leads to originality, independence of thought, and doubt concerning fixed ideas. (*d*) In broad terms, man is the demand, and the universe of God the supply.

9. *Man and nature a unity.*—(*a*) Neither can be properly studied alone. (*b*) Each has functions in education, and both are needed for all-sided education.

10. *Richness and fulness of knowledge.*—There is an abundance, rich, full, and overflowing. How is it that long years of school life result in such a dearth of knowledge?

XII. RELATION OF SELF-EXPRESSION TO KNOWLEDGE AND CHARACTER.

1. *Physical basis of expression.*—Motor discharge, organic circuit (Dewey); dynamo genesis (Baldwin); man a reactive animal (James); physical basis of morality (Münsterberg). (*a*) Functions of expression. (1) Physical development. Growth and power of the brain and nerve system. (2) Demand for attention. (3) Concentration of images. Mental development. (4) Moral power. (*b*) Knowledge becomes mind-nutrition by means of expression. (*c*) The proper exercise of all the modes of expression is the best physical exercise. Physical training has its best outcome in the development of expression. (*d*) Each mode of expression exercises certain bodily agents. The exercise of all of them develops the whole body. (*e*) The bodily agents of expression are the product of similar and appropriate exercises throughout the countless generations (heredity). (*f*) Any physical exercise in expression that cripples the body is absolutely wrong. (*g*) All exercise of expression should be easy and graceful.

2. *Mental functions of expression.*—(*a*) Expression demands the holding of images in consciousness. (*b*) Holding an image in consciousness is indispensable to the growth of that image. Holding transforms knowledge into nutrition. (*c*) By expression the memory is cultivated in the best possible way. We remember what we do. (*d*) Expression is the strongest stimulus to attention or study. (1) With brush, pencil, or clay in hand, the observation of the object to be represented is keenest and most prolonged. (2) Reading with the motive of expression. (3) Art expression without a model demands the most careful imaging.

3. *Each mode of expression has its special mental function.*—(*a*) Gesture cultivates grace and power in manifesting thought. (*b*) Speech in education excites the mind to close and careful thinking. (*c*) Music cultivates the emotions, exalts the mind, and leads to harmony in community life. (*d*) Making requires very close and careful imaging. (*e*) Modeling develops images of form. (*f*) Painting is the very best means of studying color.

(*g*) Drawing requires the most careful analysis of form and color. (*h*) Writing demands the concentration and expression of thought. All the modes of expression are naturally correlated, as form and color, making and modeling, speech and writing.

4. *Moral use of expression.*—(*a*) Expression is the self trying to realize some ideal.[1] The ideal to be realized determines the quality of the expression and the thought. (*b*) The ideal of community life is the strongest stimulus to the best quality of thought and expression. (*c*) Community life demands all-sided expression, *i. e.*, expression in all its modes.

Conclusion: Expression is the most practical and most important means of training the body, mind, and soul.

SYLLABUS FOR COURSE FOR SUPERINTENDENTS, PRINCIPALS, AND TEACHERS IN NORMAL SCHOOLS.

FRANCIS W. PARKER.

THESE lectures and lessons will be conducted in the form of a series of faculty meetings, and will have to do mainly with the functions of school supervisors. Members of the class may introduce any pertinent subject.

I. *Faculty meetings.*—(1) Their function. (2) How to conduct them. (3) Contributions by each teacher. (4) Questions: (*a*) What are you doing? (*b*) Why are you doing it? (*c*) What can you do better? (*d*) What is helping you in your work? What are the hindrances to your progress? (5) Have each teacher make a syllabus of his work or proposed work; manifold it; place it in the hands of teachers for study; discuss it in faculty meetings. (6) Have teachers make out sample courses of study for their classes. Discuss. (7) Present reviews of educational works.

II. *Courses of study.*—(1) What is the basis of a course of study? (2) The function of courses of study? (3) When not adapted to pupils, should a course of study be followed? (4) Who should change the course of study? (5) The making of programs.

III. *Testing results.*—(1) Examinations, their functions and nature. (2) When should children be examined? By whom? (3) Influence of rewards, prizes, credits, per cents, upon pupils. (*a*) Are they necessary? (*b*) Why are they necessary? (*c*) Is it possible to induce children to love knowledge? (4) How should character be estimated? (*a*) What are the relations of knowledge and skill to character? (*b*) What traits of character would you cultivate? How?

IV. *What is the use of psychology to teachers?*—(1) The record of teaching and training must be read in the body, mind, and soul of the pupil. (*a*) Is

[1] See *Doctrine of Interest.*

this statement true? (*b*) If true, what knowledge is necessary to measure justly the influence of teaching upon the body? Upon the mind? Upon the soul? (*c*) Is it possible to read this record day by day? Is it possible to know when you are really teaching; or to know whether your subject is adapted to your pupils? (*d*) The highest function of the teacher is to watch closely and understand the action of the pupils' minds. (*e*) The greatest delusion of teachers is to *fancy* they are teaching when they are not.

V. *Psychology of attention.*—(1) Attention is study by: (*a*) observation; (*b*) hearing language; (*c*) reading. (2) Attention is imaging. (*a*) The entire duty of the teacher, so far as the intellect is concerned, is to present the most economical conditions for the growth of images into strength (the development of a strong apperceptive mass). (*b*) Strong images form the educative basis of analysis, comparison, classification, notions, concepts, causation, and inductive reasoning. (*c*) Strong images are potent mental energies that lead the student to originality and independent action. (*d*) Strong images mean a strong memory. (3) Reading is imaging. (*a*) Study of text is holding in consciousness images recalled by printed words. (*b*) No image can come into consciousness that has not been there before. (*c*) Observation is the fundamental process of the growth of strong images.

VI. *Correlation.*—(1) Psychological basis. (2) External relations of subjects of study. (3) What is thoroughness? (*a*) The function of language. (*b*) Words have no organic relations. (*c*) The correlations of images. (4) Economy of correlations. (5) Correlations of modes of attention. (*a*) Reading. (*b*) Hearing language. (*c*) Arithmetic. (6) Correlation of modes of expression.

VII. *Ideals and concentration.*—(Refer to "Syllabi of Lectures and Lessons upon the Philosophy of Education" as a basis of discussion.)

VIII. *Duties of a supervisor.*—(1) Making courses of study. (*a*) What liberty should a supervisor allow to teachers in changing courses of study? (2) How and when should the supervisor inspect schools? (*a*) When should he teach classes in the schools he inspects? (*b*) How should he judge the efficiency of teachers? (*c*) How should the records of pupils be kept? (3) Promotions. (*a*) When? (*b*) How? (*c*) By whom?

REFERENCE: The COURSE OF STUDY for 1900–1901, published by Chicago Institute.

APPLIED PEDAGOGY.

FLORA J. COOKE AND KATHARINE M. STILWELL.

THIS course consists of a series of practical discussions of the experiences and discoveries of the last few years in regard to children in the elementary grades. There has been a continued effort in many places to discover the fundamental interests

of children and the form of self-activity best suited to their development. In this course the students will be expected to compare the results of their own daily observations of the children with the conclusions reached by the child-study experts.

LIST OF TOPICS FOR DISCUSSION — PRIMARY GRADES.

FLORA J. COOKE.

In the following presentation the points for discussion have been grouped together for convenience, but in actual practice the topics outlined as the last part of the course, such as reading, seat-work, number, etc., will receive equal attention throughout the course with the central subjects of study — geography, history, nature study, and literature.

I. *Discussion of the essentials of a course of study for the primary grades.*

II. *History.*— Life and interest of the children the determining guide in the work. Work of a year outlined and discussed: (1) Meaning of the home to children, its comforts, etc. (2) Construction by children of simple models of a house which would protect them in each season. (3) Comparison of their work with that of other peoples — Indians, Eskimos, Pilgrims, etc. (4) Influence of environment upon the life and work of a people.

III. *Literature.*— (1) The selection, adaptation, and telling of stories. (2) The place of myths and fairy-stories in a course of study. (3) Discussion of a suggested list of stories told in connection with nature study, history, geography, etc. (4) Basis of the selection of such stories. (5) Effect of good literature upon speech and written expression. (6) Its intellectual reaction upon observation.

Stories of industry and invention. Necessity precedes invention, and these stories are given when the children have made sufficient observations to enable them to understand the invention.

Stories which embody ideals of courage, generosity, patience, strength, wisdom, unselfishness, kindness to animals are selected, for the reason that the children imitate what they admire, and for the unconscious influence thus exerted upon character.

IV. *Domestic science and arts.*— (1) Value of the primitive industries and arts in the early education of children. (2) The importance of simple work in school economics, sanitation, and hygiene in establishing an ideal of the primary conditions of good health in a community. (3) Cooking, sewing, and making in wood, discussed from an educational point of view. (4) The necessary correlation of such work with the central subject of study. (5) Discussion of the necessary equipment and illustrations of the kinds and cost of materials used in various schools.

V. *Nature study.*— Discussion of outlines in nature study, illustrated by the experiments and expression of the children in the primary grades.

1. (*a*) Subject-matter fitted to bring children into contact with nature's phenomena. (*b*) How to lead children unconsciously to appreciate their responsibility to themselves and to the community.

2. Subject-matter: (*a*) Relating to the necessities of life — food, air, water, hygienic living, etc. (*b*) Relating to the industrial arts of the community. (*c*) Relating to the æsthetic development of the children. (*d*) Expression; relation of reading and writing to such study. (*e*) Necessity of number (illustrated by work with the children).

3. Field trips; considered as the foundation of work in the schoolroom. (*a*) Use of experiments. (*b*) Study of types of landscapes in the vicinity — swamp, lakeshore, sand dunes, etc. (*c*) Purpose of such study.

VI. *Number.*— (1) Its place in the life of a child. (2) Discussion of the number required for clear imaging in nature study, geography, and history. (3) The teaching of processes and arithmetical facts to little children. (4) The place of drill. (5) Outline of a year's work in number with a class of primary children.

VII. *Seat-work.*— (1) Essentials; kinds of work which arouse the best independent efforts of the children. (2) Standpoint of criticism. (3) Choice of material. (4) Discussion of a detailed outline of seat-work for a year. (5) Its probable results in habits, taste, knowledge, and skill. (6) Discussion of models made by the children.

[NOTE.— The teachers will be given an opportunity to make any or all of these articles — books, boxes, envelopes, tools, and apparatus — under the direction of the manual-training department.]

VIII. *Reading.*— (1) Its purpose. (2) Methods of teaching reading compared. (3) Relative value of oral and silent reading in the schoolroom; special function of each. (4) Mechanics of reading. Teaching new words, and words the meaning of which it is not easy to make clear, such as connectives and some adjectives and pronouns; necessary repetition of words; use and place of phonics; use of the dictionary. (5) Preparation of a good reading lesson. (6) Discussion of typical reading lessons; reading for comparison of observation and experience, for information, for delight in expression. (7) The place and purpose of a reading, recitation, or lesson upon the daily school program; the final test of a good reading lesson.

IX. *Expression.*— (1) Value of the various modes of expression in a child's development. (2) The reason for choice — from the child's standpoint, from the adult's. (3) Relation between a child's oral and written vocabulary. (4) Economy in the teaching of language, spelling, grammar, punctuation, and capitalization. (5) Methods of teaching writing compared. (6) Comparison of the purpose and basis of this form of expression with those of drawing, painting, modeling, and dramatic action. (7) Necessity

and place of drill and direction in all expression work. (8) The influence upon children of songs, games, gymnastics, manual training, and dramatization of stories; effect of artistic surroundings.

X. *Final discussion of courses of study for the primary grades.*— Values compared: (1) The ideal of the teacher. (2) The governing motive of the children. (3) The self-activity exercised by the children. (4) The kind and quality of expression necessitated. (5) The habits established by the work. (6) The intrinsic value of the subject-matter. (7) The results in knowledge. (8) The results in skill. (9) The amount of drill required, etc. (10) The recognition and treatment of natural fatigue and of temporary weakness. (11) The recognition and treatment of physical, mental, and moral defects. (12) The recognition and treatment of the child's individual interests and marked peculiarities.

LIST OF TOPICS FOR DISCUSSION—GRAMMAR GRADES.

KATHARINE M. STILWELL.

I. *What the school is.*—The school as a community: its characteristics. The grade as meaning the same stage of development, similar tendencies, unity of interests. Relation of one grade to another. In what do the grammar grades differ from the primary grades?

II. *Order.*—What it is. Its relation to the ideal of education. Illustrations drawn from various schools.

III. *Self-government.*—How far is it possible? Liberty *versus* license. Relation of privilege to responsibility. Relation of school democracy to national democracy. Is a democratic school organization for purposes of government advisable?

IV. *Responsibility.*—Each for all and all for each. Necessity in a school community for accurate and helpful work. Care of personal and public property. Housekeeping. Hygienic and æsthetic condition of school premises and neighborhood.

V. *Relation of the course of study.*—Upon what does the selection of subject-matter depend?

1. *History and civics.*—Use of history in studying the present social conditions. What history to select. Political history: at what age are pupils interested in it? Its relation to social and industrial life. Civics as an aid to self-government. Current events. Excursions—how to conduct them. Use of information gained and material collected. The stereopticon. Use of geography in history-teaching.

2. *Science.*—Different aspects of this subject. Observation of nature. Purpose of this. The landscape. Relation of reading to observation. Inferences. Study of the applications of science in the industrial arts of the community. Management of class: (*a*) In the field. Preparation. Number of pupils in the class. Order. Use of material collected. Expression. (*b*) In

the laboratory. Purpose of laboratory work. Grouping. Directions. Noise. Care of the laboratory.

3. *Geography.*—Influence of geographic environment upon man. The evolution of that environment. Political geography. Commercial geography. Use of pictures. Maps. Sand and chalk modeling.

4. *Literature and reading.*—What determines the selection for study. Oral reading. Effect of dramatic reading: (*a*) upon thinking; (*b*) upon the emotions; (*c*) upon the orderly expression of the emotions; (*d*) upon acting. Dramatization of stories. Morning exercises. Special day exercises: Thanksgiving, Christmas, Washington's birthday, Decoration Day, Commencement.

5. *Mathematics.*—Some defects in teaching number. Its application to history, geography, and nature study. Geometry in the industrial arts. Generalized number.

6. *Music.*—A means of self-expression. Choice of songs: (*a*) in relation to thought; (*b*) in relation to subjects of study. Notation: how introduced; with what motive. Scale relations and melodies.

7. *Gymnastics.*—Does body indicate normal development for age? Laws of growth and development. Characteristics of adolescence. Physical habits: standing position; position of body for reading, writing, and singing. Condition of sense organs. School hygiene—seating, lighting, heating, and ventilating. School diseases.

8. *Expression.*—Necessity for expression. Effect of expression. The modes of expression: painting, drawing, making, modeling, music, oral reading, speech, writing. What is the value of each? Acquirement of skill. Penmanship. Economy of effort. Preparation and care of materials used. Management of painting and drawing exercises.

VI. *The daily program.*—Should it be flexible or fixed? Grouping of pupils. Basis of promotions.

VII. *Social life of pupils.*—Games and plays. Entertainments. Parties. Frequency. Nature. The child's motives in these activities.

VIII. *Relation of the school to the larger community.*—The school as a social center. Parents' receptions. Mothers' meetings. Lecture courses. The teacher as a citizen of the community.

THE KINDERGARTEN.

BERTHA PAYNE AND ANNE ELIZABETH ALLEN.

KINDERGARTEN THEORY AND PRACTICE.

BERTHA PAYNE.

THE kindergarten is a community in which a child may gain his first experiences of life in a large group of equals.

The family from which he comes usually stands to him as a small group of superiors. In accommodating himself to the new conditions moral training follows. Social impulses are fostered and directed. The growth of body and mind must go on with the aid of fuller means of self-expression.

The study of the kindergartens is the study of the child in his social relationship during the play period. During the ensuing six weeks the topics discussed will be illustrated by the actual work and play of the kindergarten, and by the presentation in the classes of typical lessons in hand-work, plays, and games.

I. *The nature of the child in the play stage.*

1. Impulsive activities in relation to growth of imagery: (*a*) necessary relation to acquisition of modes of control; (*b*) growth of the power of influence in relation to action.

The impulsive activities of children are the necessary and fundamental means by which they extend their knowledge, acquire strength and skill, and take the first fundamental steps in tracing causal relationship. They must have scope (freedom) and materials.

2. Types of imagery: visual, tactile, auditory, and motor.

3. Toys, and Froebel's gifts, considered as means of furnishing incentives to action and means of arousing imagery.

4. Order of development of play: (*a*) Experiment, imitation, invention, and the force of accidental discovery in each mode. Symbolic play. (*b*) Froebel's gifts; their comparative value; use and abuse. (*c*) Building contrasted with making; differences in degrees of strength of imagery demanded by each kind of construction. (*d*) Test of value lies in fitness of each to child's power; each new step must include the old and add to it.

II. *The social appeal:* Its force in shaping a child's play and work.

1. Occupations of the home: housekeeping, cooking, marketing, sewing.

2. Occupations outside the home: trades and industries.

3. Civic life in its more concrete phases; transportation in all forms, protection, street service.

4. Modes of expression spontaneously employed by children to express their interest in these experiences. Speech, gesture, drawing, painting, modeling, making, singing. How does the kindergarten differ from the primary grades in use of these modes?

III. *Contact with nature.*

1. Daily experiences and what to do with them. Records, inferences, experiments, dramatizations.

IV. *Plays as dramatic representations.*

1. Value in securing a comprehension of the nature and motive of thing represented.

2. What is worth playing?

3. Selection of some typical situations from environment and literature.

V. *The function of literature* (stories, poems)—to deepen sense of values or to bring knowledge? Lists of stories, graded. *Mother Goose* and fairy-tales. Froebel's *Mother-Play Book.*

VI. *The place of work in kindergarten life.*— Balance between symbolic living of experience and the pursuit of real ends. What shall be the test to determine when children need representative play, and when work?

VII. *Planning outlines for the kindergarten* with a view to living as an organized community, finding relative place of excursions, various modes of expression, housekeeping, games, and songs, and of an approach to nature study.

VIII. *Relationship between play and art.*— Development of every phase of childish interest into its corresponding art, or science, or field of research.

WORK WITH THE KINDERGARTEN CHILDREN.

ANNE ELIZABETH ALLEN.

THE problem presents itself of six weeks' work with little children, from three to six years of age, who are new to the teachers and probably to each other, and who may or may not have been in a kindergarten before. With no knowledge of the individual children it seems safe to begin to play with them the simplest little games, selecting, when possible, those that are familiar to them and best fitted to unify the different individuals into a social body, with common interests and common purposes. The season and the adjacent park suggest constant outdoor work, and we shall plan to spend a large part of our time outside the schoolroom. If possible, we shall plant seeds in the kindergarten, making our own flower-pots and having them baked in the kiln. At the same time we shall make a series of little playthings that the children will take to the park to play with. Games with these will be devised, and, when possible, suggested by the children.

As questions concerning the outside conditions surrounding

us are asked, we shall gradually begin to watch the growth of grass, flowers, and trees; to notice the forms they take, the colors and odors, the way the leaves grow on different trees, the trees that afford the best shade, the forms of flowers, etc. The birds and their songs and habits, together with insect life in its relation to plant life, the effect of the wind, rain, and sun, and the clouds, will in turn be observed, and their movements and other characteristics will be represented.

SUBJECT: THE RELATION OF THE SUN TO ALL LIFE.

I. *Relation to the home life.*—(1) Rising sun determines: time of getting up; time for breakfast. (2) Setting sun determines: time for supper; time for going to bed. (3) Position of different rooms in home with regard to rising and setting sun. Which rooms have sun all day?

II. *Relation to plant life.*—(1) Best place to plant flowers or vegetables. (2) Best position in the schoolroom for plants. (3) Do plants show by their way of growing their position in relation to the sunlight? (4) Watch growth of grass in the sun and shade. (5) How do the trees generally keep their leaves in relation to the sun?

III. *Relation of sun to animal life.*—Animals that love the sun: cows, dogs, chickens, etc.

IV. *Relation of the sun to eggs of insects and other animal life.*—Caterpillar, moth, snake, turtle, etc.

Materials: Clay, sand, paints, raffia, willow, large building blocks, yarn, wood.

Playthings: Marbles, balls, jumping ropes, hoops, magic rings, horse reins, kites, and boats.

Clay—marbles, balls, flower-pots.

Paints—color marbles and balls; paint trees, flowers, landscapes.

Willow and raffia—hoops, jumping ropes, magic rings.

Building blocks—paths in park, streets, window-boxes, seats in park, windows in homes, summer houses.

Wood—kites and boats.

Stories: "Clytie;" "Phaeton;" "The Three Neighbors" (June COURSE OF STUDY); "Rhœcus;" "Old Pipes and the Dryad" (Stockton).

Games: Jacob and Rachel; Finding the Sun; The Light Bird; Sunbeam Fairies; Rising and Setting of the Sun; dramatizing the story of "Clytie;" growth of seeds; rain, wind, clouds; flight of birds, butterflies, bees, etc.

Songs: "When I'm Softly Sleeping," "The Light Bird," "Lips Tell Good Morning" (*Smith's Songs*, Part I); "Did You Ever See a Lassie?" "A Partner so Merry," "Rain Shower," "Rain Coach" (*Smith's Songs*, Part II); "The Brownies" (*Gaynor's Songs*); "Lullaby" (*Hill's Songs*).

Instrumental music: Clara Louise Anderson, *Instrumental Characteristic Rhythm*, Parts I and II; A. D. Scammel, *Musical Rhythms for Piano.*

Rhythm: Marching, simple skipping, running, tiptoe running, sunbeams, clouds, butterfly and bird movements.

NATURAL SCIENCE.

WILBUR S. JACKMAN, ALICE P. NORTON, IRA B. MEYERS.

IN order to meet as fully as possible the needs of those who desire work in nature study, the subject will be presented in three closely related courses. Course I deals with the subject in its general aspects, and Courses II and III deal with special topics in considerable detail. During the first three weeks, Course I will be open only to those who enter for the first half of the term. During the last three weeks it will be open (1) to those who enter at that time and (2) to those who are taking either Course II or Course III, and who may desire a somewhat broader survey of the field.

The primary- and grammar-grade teachers who elect Course I will be assigned to separate sections, and the work will be adapted to each. The sections will be divided into groups for convenience, and each group will be assigned according to the choice of the individual to definite work upon which each student will be expected to make reports as often as necessary. The subjects given to the groups will be selected from the subjoined syllabus of topics. Each group will report to the entire class, so that the mutual relations of the different lines of study will appear. The topics for discussion will be assigned to different groups for presentation, through which the pedagogic aspects of the subject will be considered.

COURSE I. PEDAGOGICS OF NATURE STUDY.

WILBUR S. JACKMAN.

I. *Field work as a basis for nature study.*—(1) The landscape as a moving picture; its daily, seasonal, and more general aspects; those related to the work of man. (2) The chapters in landscape history; procession of plants and animals; their interrelations; plants and animals as constructive and

destructive agents; buried history of the landscape. (3) The landscape as an organized whole; the primary and secondary influences. (4) Human development and history as related to the landscape; food; drainage, slopes, springs; fuel; shelter; exchange; occupations; reactive effect of environment; values as determined by the landscape features.

PRACTICAL WORK: The students will be asked to describe and interpret the landscape with which they are most familiar. Different areas near the school will be used as a basis for further study.

DISCUSSION: *What is observation? Its function? Conditions?*

II. *History of the year in color.*—Scientific significance of color. Observation of children as judged by their paintings; color, form, perspective; individuality of pupils.

PRACTICAL WORK: Students will be required to make a sketch of the landscape in color. (Water-colors, brushes, and painting paper must be provided by the student for this lesson.)

DISCUSSION: The *simple* in nature contrasted with the *complex;* the *near* with the *remote;* the *vast* with the *small;* the *regular* with the *irregular.*

III. *Landscape activities: the plants.*—(1) Colonization of plants; relation to physical features; water areas; shore and marsh areas; dry alluvial areas; upland areas; rock and sand areas; slopes. (2) Colonies of plants as affected by the seasons; as affected by each other; competition and boundaries; migration; interdependence. (3) Interrelations of individuals in a colony.

PRACTICAL WORK: Field study of colonies in the vicinity.

DISCUSSION: *Relation of reading to observation.*

IV. *The problem of living: plant devices.*—(1) Problem stated; the plant essentially active. (2) From the isolated seed to the all-related plant; how it establishes relations to heat, light, and moisture; space and time relations.

PRACTICAL WORK: Students will be required to work out various relations of plants from the form of specimens selected from the field.

DISCUSSION: *The tests of good reading matter. Students required to make selections.*

V. *Landscape activities: animals.*—(1) Animal colonization related to physical aspects; in the soil and water; on the shores; in rock ledges lowlands, uplands, woods, meadows. (2) Various aspects of trees, of water areas, of the atmosphere, inviting colonization. (3) Interrelations of colonies; boundaries; migration; extinction; mutual support.

PRACTICAL WORK: Field and museum study of specimens. Modes of preserving colonies for study.

DISCUSSION: *How children may develop reading lessons of interest to the whole school.*

VI. *The problem of living: animal functions.*—(1) Functions of the animal body: nutrition, excretion, energy, reproduction. (2) Interrelations:

offense, defense, co-operation. (3) Relations to environment: form and covering.

PRACTICAL WORK: Study of the constituents of tissues; of food-stuffs. Structure studied by means of models and dissections.

DISCUSSION: *How should writing be used in connection with the lesson?*

VII. *The fate of living things: change.*—(1) Life period; duration; accidents; natural termination. (2) Disintegration of tissues; redistribution of matter under different conditions. (3) Fossilization; conditions contrasted with those causing decay.

PRACTICAL WORK: Study of a fossil; interpretation of its history.

DISCUSSION: *Function of written work.*

VIII. *The fate of living things: change.*—(1) Idea of change substituted for the primitive idea of destruction. (2) Decay as related to reorganization.

PRACTICAL WORK: Determination of gross constituents of various parts of plants and animals.

DISCUSSION: *What is the relation of observation to imagination?*

IX. *Inorganic nature: change.*—(1) Agents of organization: living things; water; the atmosphere; rock changes; solution, filtration, deposition. (2) Agents of disintegration: living things; heat, water, air, etc.

PRACTICAL WORK: Study of museum specimens of rocks. Field study.

DISCUSSION: *Importance of preserving pupils' work as a record.*

X. *Inorganic nature: force.*—(1) Study of heat in sunshine; distribution. (2) Heat as energy in the living form.

PRACTICAL WORK: Measurements showing the variation of heat distribution at different hours of the day and in different seasons.

DISCUSSION: *The misconceptions of nature acquired by the child through direct observation.*

XI. *Inorganic nature: life-conditions.*—(1) Province of meteorology; weather maps; their exceptional value. (2) Sources of moisture in the United States; storm paths; development of great climatic pictures. Use of Weather Bureau statistics.

PRACTICAL WORK: Use of meteorological instruments. Keeping of records.

DISCUSSION: *Myth and nature study.*

XII. *Inorganic nature: life-conditions. Water.*—(1) Atmospheric vapor. The psychrometer. (2) Quantity of water in a given rainfall; in a given depth of soil. (3) Evaporation: from the soil; from free surface of water. (4) Transpiration by plants.

PRACTICAL WORK: Use of instruments; measurements and calculation of results.

DISCUSSION: *The function of number work in nature study.*

XIII. *Inorganic nature: life-conditions. Light.*—Physiology of seeing;

sources of light; radiation and reflection; visibility of objects. (2) Invisibility of light; phenomena of color.

PRACTICAL WORK: Experiments showing effect of light upon plants; formation of images by reflection and refraction.

DISCUSSION: *The place of experiment in nature study.*

XIV. *The direction and transfer of energy.*—(1) The function of a machine; the human body as a machine. Relation of efficiency to form and proportion. (2) Economy in structure.

PRACTICAL WORK: Calculation of work done through machines. Various strength tests of materials used in building.

DISCUSSION: *The place of manual training in school work.*

XV. *Nature study in the development of moral character.*—(1) Man's various notions regarding the universe. The geocentric idea—the Ptolemaic theory; the heliocentric idea—the Copernican theory. (2) Man's notions regarding the world of life; anthropocentric idea—theory of special creation; biocentric idea—theory of evolution. (3) Early prejudices; different conceptions of character depending upon notions regarding the origin of things. (4) Nature and the formal or external aspects of character. Does nature study sanction or condemn "ape and tiger" methods in society. Development of motive. (5) Nature study and the will. Evolution of good will.

DISCUSSION: *How can school work in general be made most effective in character-building?*

COURSE II. CHEMISTRY.

ALICE P. NORTON.

THE work here given differs from the ordinary course in general chemistry chiefly in the method of approach. For the sake of relating the science more closely to the life of the pupils, and of giving reality to chemical phenomena, the work is begun with the study of common objects of daily experience. Leaves and fruits have been selected for investigation, and the elements studied will be considered in relation to the life of the plant, as well as from the chemical standpoint. The work will be embraced under the following heads:

I. *Investigation of the composition of different leaves and fruits* as to the amount of water, of combustible material, and of ash contained in them. A number of different kinds both of leaves and fruits will be used, that their comparative composition may be determined.

II. *The study of the ultimate composition of the substances* found, and of the most important elements present.—(1) Water. Properties, solvent power

boiling and freezing points; composition, determined by electrolysis. (2) Hydrogen. Preparation from zinc and acid; synthesis of water by burning of hydrogen. (3) Burning of various substances in air: sulphur, magnesium, iron, zinc. Determination of gain or loss of weight by igniting five grams of zinc dust or iron filings, weighed before and after heating. Preparation of oxygen from red oxide of mercury, and from potassium chlorate and manganese dioxide. (4) Nitrogen, obtained by the action of moist iron filings on an inclosed volume of air. Composition of air. (5) Carbon, burned in oxygen, and the product tested. Other sources of carbon dioxide; use in vegetable life. (6) Sulphur and its oxides. Formation of sulphuric acid. (7) Preparation of hydrochloric acid from sulphuric acid and salt; study of acids, bases, salts. (8) Chlorine group. Quantitative determination of chlorine in table salt. (9) Metallic elements most commonly found in leaf and fruit: sodium, potassium, calcium, etc.

III. *Laws of chemical change and combination.*— As the experiments suggest it, physical and chemical change, the atomic theory in its simplest form, valence, the laws of definite and multiple proportions, and such other theory as seems necessary, will be discussed.

IV. *Pedagogy.*— Place of chemistry in the work of the elementary and of the secondary school. When do children ask questions which can be answered only by chemical experiment? Value to the teacher in other work. Method of presentation.

COURSE III. ELEMENTARY FIELD WORK.

IRA B. MEYERS.

EXPLANATORY: The following courses are a study of the occurrence, distribution, and interrelation of the organic and inorganic forms of a topographic area.

The course in elementary biology is a study of an area with special reference to the interrelation of its life-forms.

The museum course is a study of the materials found in an area with special reference to the collecting and preparation of this material for class study.

The courses are distinct in the prominence given these two phases.

The work of both courses is based on a series of excursions to typical localities in the vicinity of the Kosminski School.

FIELD STUDY (BIOLOGY).

"The life of any region may be considered as an association bound together by the fact that all the forms are adapted to living in the area."

The topography of the area determines directly or indirectly the occurrence and distribution of the life-forms included in it.

The varied conditions of temperature, moisture, soil, light, slope, as well as the living forms themselves, present as many conditions for living, and the life-forms are usually as varied as the conditions for living.

The aim of the field work is to observe conditions under which life exists and to note the influence of constant and varying factors in the area upon its occurrence, distribution, characteristics, and life-history.

General outline.— Physiographic features: Lake, beach, sand (dune) and clay (glacial drift) bluffs and uplands. Swamps and lagoons, rock outcrops, lowland and upland meadows, with usual ridge and depressions.

A. PLANT LIFE.

I. OCCURRENCE AND DISTRIBUTION OF PLANTS.

1. *Observation and identification of plants found in the various areas.*—(*a*) Beach plants—old beach, recent beach. (*b*) Plants on sand (dune) areas, on clay (drift) areas: (1) recently disturbed areas; (2) old areas. (*c*) Swamp areas—plants within the water border; plants outside of water border, but within marshy area; plants on margin of marsh extending to low meadow land. (*d*) Plants common to prairie (beach) ridges, to depressions.

QUESTIONS: What plants seem generally distributed throughout these areas? What plants are confined to certain particular areas? What factors seem to have the greatest influence upon plant distribution in this region? What are the striking differences in plants of these various areas? Do these structural differences determine to any extent the position of the plants in the area?

II. CONDITIONS INFLUENCING THE PLANT LIFE OF A REGION.

1. *Soil conditions.*—(*a*) Nature of soils in the various visited areas (composition or kind). (*b*) Chemical nature of each soil. (*c*) Physical nature of the soil. (*d*) Heat and moisture capacity and retaining qualities of these soils. (*e*) Root penetration.

QUESTIONS: In what ways do the soils of these areas seem to influence plant growth and distribution? Are the variations due to soil influence the result of the physical or chemical nature of the soil? Does the nature of these soils seem to affect plant structure? What particular plant structure is most closely related to the soil?

2. *Temperature conditions.*—(The influence of temperature upon plant life should be observed during spring and fall, and this phase of study will depend upon previous observations.) Influence of present (July) temperature

conditions upon plant life. Plant structure and adaptations related to temperature.

3. *Light conditions.*—(*a*) Variable light conditions of the plants of the area. (*b*) Parts of plants most intimately related to light. (*c*) Structures and adaptations which enable plants to grow under various light conditions.

QUESTIONS: What variations in plant growth, color, form, or distribution are caused by their light relations? How do plants avoid the shade of surrounding vegetation? How do plants avoid the shade of their own foliage?

4. *Moisture conditions.*—(*a*) Variation in moisture conditions in the several areas. (*b*) Variations in plant structure as caused by moisture conditions. (*c*) Plant groups or societies as related to moisture conditions.

QUESTIONS: What variation in structure is noticeable in plants living in extreme moisture conditions (pond to dune)? What parts of plants are most closely related to moisture? Do plants have any control of their water supply?

B. ANIMAL LIFE.

GENERAL OBSERVATIONS: Forms found in each physiographical feature: Dominant forms. Occasional forms.

1. *Range.*—(*a*) Forms unrestricted in their range. (*b*) Forms restricted to a particular part of the area. (*c*) Forms present because of a particular physiographic feature—permanent residents. (*d*) Forms attracted by seasonal food—temporary residents.

2. *Movement.*—Demands for movement; range; factors influencing movement. Organs of locomotion. (*a*) As adaptations to different media—land, air, water. (*b*) As affected by some peculiar aspect of the same medium. (*c*) As affected by peculiarity of habit.

3. *Food.*—(*a*) Condition or nature of food—liquid or solid. (*b*) Character of food—vegetable, animal, mixed. Food, vegetable: locating food; kind of plant; part of plant; effect of injury upon plant; plants attempt to resist undue injury; length of time food is available and relation to life of animal. Food, animal: method of locating and capturing food.

4. *Protection.*—(*a*) Adaptations which enable individuals to maintain their position among these various forms. (1) Life-forms living in areas inaccessible to other forms. (2) Specially constructed homes or shields. (3) Special protective organs. (4) Secretions. (5) Cunning and swiftness. (6) Color protection. Without visible means of protection. (*b*) Adaptations enabling individuals to resist seasonal changes.

5. *Homes.*—(*a*) Living isolated in pairs, in colonies. (*b*) Living in constructed homes. (*c*) Depending upon accidental shelter of holes, crevices, etc. (*d*) Changing growing vegetation into homes—galls. (*e*) Songs, calls, etc.; purpose, methods of producing sound.

REFERENCES: Salisbury and Alden, *The Geography of Chicago and its Environs;* Cowles, *The Plant Societies of Chicago and Vicinity;* Jordan, *Animal Life;* Coulter, *Plant Relations;* Comstock, *Insect Life;* Chapman, *Bird Life.*

MUSEUM.

EXPLANATORY: In the main the nature of the material in a school museum would be determined by the course of study or class work of the school. The mass of the material should be arranged in related groups or series. These series should be such as would form centers for study. The greater part of the material should be selected and prepared by pupils from materials within the range of environment of the school, and should aim to illustrate associated relations of form, structure, color, etc.

The collecting and arrangement of this material are a definite study which finds expression or meaning in its arrangement. The educational value of any material depends upon its appeal to the observer; whatever appeals to us we see — the rest of the natural world passes by unobserved.

All materials exhibit associated relations of force or function, but these relationships are frequently so distributed through time and space as to remain isolated and obscure, *e. g.*, the various phenomena of erosion, transportation, and deposition of rock material as related to soils and sedimentary rock.

SUGGESTIVE SERIES FOR MUSEUM STUDY.

1. *Minerals.*—(*a*) Common rock-forming minerals (twenty-five to thirty specimens); their properties and resulting effect upon the rocks composed of them. (*b*) Series of common rocks (fifteen or twenty) and their varieties; their properties as related to erosion, topography, and industry. (*c*) Effect of various erosive agencies on (*b*), as illustrated by collected rocks. (*d*) Various stages of decay in rocks—final products. (*e*) Effect of pressure on rocks as exhibited in rock formations. (*f*) Mineral biographies: ($CaCO_3$) as bone, shell, coral, coquina, various limestones, crystals, marble. (*g*) Mineral industries—clay products and processes, etc.

2. *Plant life.*—(*a*) Plant structure as exhibited in woods, etc. (*b*) Plant structure as adaptation to environment. (*c*) Plant structure as adaptation to distribution. (*d*) Plant structure as related to industry. (*e*) Elements and compounds entering into plant body, etc.

3. *Animal life.*—(*a*) Insects—protective adaptations, homes, food materials, changes of plant forms, metamorphosis, etc. (*b*) Other forms—structural modifications in coverings, dentition, and mouth parts; organs of locomotion; animal products; elements and compounds (proportion) entering into composition of the animal body. (*c*) Special group: an area as a center for life.

4. *Miscellaneous.*—(*a*) Various commercial products of a natural product: coal—tars, oils, drugs, colors, etc. (*b*) Historic aspect in the development of lighting. (*c*) Industrial processes—manufacture of cotton goods, silk, etc.

HOME ECONOMICS.

ALICE P. NORTON.

APPLIED CHEMISTRY.

THE chemical problems which arise in the household arts are of much greater variety and complexity than is often imagined. Many of them have never been solved, while others are only in process of solution. Some of these problems are too intricate for anyone except the advanced student of organic chemistry — for example, the changes which take place in gluten during the action of yeast and the baking of bread; others are comparatively simple, and their mere presentation should add much to the interest of daily home life; many are so important that their solution may modify our preparation of food, and teach us more healthful methods of living.

The work outlined will be useful to the grade teacher chiefly as a background of knowledge for the study of foods, rather than for direct application in teaching. It will consist of (1) the qualitative determination of the composition of some typical foods, and the study of the food principles; (2) the detection of food adulterants and preservatives; and (3) the testing of other household supplies.

I. *Bread.*—(1) Flour: Separation, by washing, of starch and gluten. Different flours compared as to the proportion they contain of starch and proteid. (*a*) Gluten, as a typical proteid. Characteristics and classification of proteids. Proteid tests. Identification of proteid in other foods. (*b*) Starch: Occurrence, composition, and test. Comparison of starch in different grains and vegetables. Change of starch into dextrin and sugar by the action of acids. Study of sugar. Classification of carbohydrates. (2) Yeast and the chemistry of fermentation. (3) Baking powder, as a substitute for yeast.

II. *Milk.*— Examination under the microscope. Qualitative determination of sugar and fat. Quantitative determination of water, total solids, and mineral matter. Precipitation of casein by acid and by rennin. Preservatives used in milk. Butter and cheese, and their adulterants. Oleomargarine.

III. *The detection of adulterations in some common foods.*—Testing of coffee for chicory; of cocoa for alkalis used in its preparation, and for flour; of flour and bread for alum; of baking powder for alum and other adulterants. Testing for lead of "tin" foil used in wrapping foods.

IV. *Laundry and cleaning supplies.*— Soap and its manufacture. Tests

for excess of alkali. Detection of iron in bluing. Analysis of washing compounds, and silver polishes.

HISTORY AND LITERATURE.

EMILY J. RICE AND GUDRUN THORNE-THOMSEN.

SYLLABUS OF A COURSE OF LESSONS IN HISTORY AND LITERATURE FOR THE ELEMENTARY SCHOOLS. (FOR TEACHERS OF THE FIRST THREE GRADES.)

GUDRUN THORNE-THOMSEN.

THE school should give the best conditions for acquiring social experience, and should be so organized as to give the child opportunities to use this experience for the good of the community.

The work engaged in should have social meaning and social value. By social work is meant all the activities that make social life possible.

The study of life as it pulsates outside school presents two aspects: the scientific or industrial, and the social.

The scientific deals with the means and ways by which activities are carried on — that is, their tools and methods; the social deals with the individuals who are engaged in these activities.

We have in the city of Chicago unparalleled opportunities to bring the child into contact with life. Almost every industrial activity and every phase of social life is here represented. Chicago shows us on a stupendous scale a laboratory where industrial and social problems are being worked out before our very eyes. Applied science meets the child at every step; the geography of the whole earth is reflected in the resources which unceasingly flow in; the history of the race finds here an expression in the social life of two million people.

The children should enter into a sympathetic relationship with the countless workers who in different ways add to the sum-total of our civilization, thereby realizing the cost at which our daily lives are carried on.

The school proper should mirror this outside social and industrial life in a simplified form, adapted to the needs of the school community. In the study of outside life and activities the child finds the inspiration and purpose that will lift his own work to a higher level and enable him to determine his own place in the community.

The detailed outline below suggests activities suited to children of the three primary grades, and also some aspects of the social life surrounding the children, which need to be studied in order to give meaning and depth to the school work.

The study of social life and the work at school will suggest stories of the lives of people in other countries under similar or different conditions.

The purely historic aspect of our society, that is, a consideration of the growth of our social occupations and institutions, does not appeal to the child at this early age; he is not conscious of such growth, and would not appreciate a study of it. The child is intensely interested in primitive man and primitive ways of living, not because they mark the beginnings of our civilization, but because they correspond to his own stage of development and reflect his own limited ability and crude ideas.

The child's interest in fairy-stories and myths is of a similar kind; they express in his own language his ideas and views of life, and open to him a world where he is perfectly at home—as much so as in the actual world around him.

It is hardly possible to make any discrimination between the two subjects—literature and history—in these grades; they both emphasize the human aspect of the child's environment; both deal with the lives of his fellow-men.

The work naturally falls under four heads:

I. Social activities and work in the school.

II. Study of human life and social activities of environment.

III. Stories: (1) Of industry, occupations, and inventions. (2) Of primitive peoples. (3) Of children of today. (4) Of children in other lands and of long ago.

IV. Fairy-stories and myths.

The different types of stories under Topic III have for convenience sake been classified under one head; they will,

however, not be considered as a separate topic, but will be related to Topics I and II, of which they form an organic part.

The work of the outline is not classified as to grades. It becomes a matter for the individual teacher to select from the work suggested according to the needs of her children. The social environment by and for which the child is educated varies, so as to necessitate different phases of work in different localities. Nor would such a classification be desirable, as the child at different stages of growth is surrounded by the same social conditions, and, broadly speaking, engages in the same activities and pursues the same line of investigation, although with ever-increasing ability and understanding.

It is very difficult to make a division of the work according to subjects — history, science, etc. — these being simply different aspects of the same social environment, and all needed to carry on social activities in the school. Consequently the work as outlined will be seen constantly to branch into subjects other than history and literature.

TOPICS FOR DISCUSSION.

Community life as a basis for a course of study.

What community life in school should be; its aim and organization.

Relation of good habits and moral qualities to social work.

Relation of the school to the larger community.

Selection of subject-matter according to needs of social work.

Differentiation and specialization of work in the school; group work.

Relation of social work and activities to: (1) recitation; (2) modes of expression; (3) reading and writing; (4) physical training.

Child study. Recent investigations with reference to social work and activities of the child. Some fundamental propositions.

DETAILS OF OUTLINE.

1. Making of a playhouse. Arrangement of rooms; use of each room. Decoration: designing of wall-paper; weaving of carpets; pictures, flowers, etc. Making of furniture, utensils, and dishes. Visit to buildings under construction and to lumber yards and saw-mills.

2. Life of the fireman. Visit to stations. Dramatization of the incidents in firemen's lives.

3. Making of a doll theater and accessories, such as dolls, curtains, and scenery, to be used for the acting out of stories dramatized by the children.

4. Weaving and sewing. Making of necessary articles and decorations for room. Making of loom. Visit to shops, museums, and industrial plants.

5. Making of pottery. Marbles, dishes, vases. Original designs. Visit to ceramic rooms and shops for chinaware.

6. Cooking, baking, preserving, making of butter and cheese. Children will prepare and serve luncheons. Visit to grocery stores, bakeries, and certain departments of the stock-yards.

7. Care of domestic animals, such as cows, chickens, etc. Visit to farm. Study of cattle ranch.

8. Making and care of garden. Visit to farm during the different seasons. Study of the work of the farmer throughout the year. Making of garden implements, wood and metal. Visit to blacksmith shop, foundry, and factories.

9. Making of play boats. Occupations and life characteristic of the lake-shore (seashore). Visit to life-saving station and lighthouse. Visit to the Chicago harbor, and vessels loading and unloading. The fire-boats.

10. How the city is supplied with water. Visit to the waterworks. Story of the building of the tunnels and the cribs. Primitive ways of obtaining drinking water in Chicago.

11. Printing and bookbinding. Visits to printing establishments.

STORIES.

1. Stories of industry, occupations, and invention: Stories of the lumberman's life. Story of fireman. *Luca Della Robbia. Palissy the Potter* (Lamartine). Stories of travel (Nansen). Stories of sailor's life.

2. Story of primitive people: Eskimos—story of *Agoonack* (Jane Andrews). Indians—story of *Hiawatha* (Longfellow). Stories of shepherd life—*The Great Chief, Old Stories of the East* (Baldwin).

3. Stories of children of today: *Viggo, Beate* (Jörgen Moe).

4. Stories of children of other lands and of long ago: The Norse boy. The Greek boy. Stories of chivalry.

5. Stories for particular occasions: Thanksgiving stories. Christmas stories. Story of the lives of Lincoln and Washington. Decoration Day.

6. Fairy-stories and myths: *The Pig That Set up House in the Woods. Billy-Goats Gruff. Peter, Paul, and Espen. Land East of the Sun and West of the Moon.* Norse myths: *Thor's Journey to Jotunheim*; Balder; *The Work of the Dwarfs.* Greek myths: Apollo; Athena; stories from the *Odyssey;* heroic tales.

DISCUSSION OF POINTS CONCERNING STORIES.

1. Why should fairy-stories and myths have a place in school? Origin of stories.

2. Criterion for the selection of stories.

3. Criticism of modern made-up stories.

4. Ideals and ideas of the fairy-story.

5. Adaptation of fairy-stories and arrangement as to stages of child-development.

6. Misconceptions: (*a*) Cultivation of imagination as motive for telling stories. (*b*) The fairy-story as a moral tonic. (*c*) Enmity between science and fairy-stories. (*d*) Lessons in science disguised as fairy-stories. (*e*) Correlation of science work and myths. (*f*) Premature interpretation of story.

7. Methods of presentation: telling, reading, dramatization, drawing, writing. Stories told and dramatized.

8. Suggestive list of stories and books for children.

REFERENCES FOR TEACHERS.

Parker, *Talks on Pedagogics;* Dewey, *The School and Society;* Rice, *Course of Study in History and Literature;* Starr, *Some First Steps in Human Progress;* Mason, *Origins of Invention;* Tylor, *Primitive Culture;* Morgan, *Houses and Homelife;* Marsden, *Cotton Spinning, Cotton Weaving,* pp. 9–55; Nadaillac, *Stories of Industry;* Yeats, *Commerce and Industries;* Murché, *Science Reader;* Bulfinch, *Mythology;* Anderson, *Norse Mythology;* Cox, *Mythology of Aryan Nations;* Ruskin, *Queen of the Air;* Carlyle, *Heroes and Hero-Worshippers;* Hawthorne, *Wonder-Book, Tanglewood Tales;* Baldwin, *Old Greek Stories, Old Stories of the East;* Farnell, *Cult of Greek States;* Asbjörnsen, *Fairy Tales;* Grimm, *Fairy Tales;* Andersen, *Fairy Tales.*

SYLLABUS OF A COURSE OF LESSONS IN HISTORY AND LITERATURE FOR THE ELEMENTARY SCHOOLS. (FOR TEACHERS OF THE HIGHER GRADES.)

EMILY J. RICE.

IN the plan outlined for the first three grades, the study of society is chiefly from the standpoint of its present condition rather than its evolution. The emphasis is placed upon social work, and only such historic material is introduced as helps the children to appreciate the value of their own efforts. The outline for the upper grades will follow the same lines of work as have been indicated for the lower ones. The children should continue the constructive activities, since by these activities they are entering into race-experiences. They should also learn, gradually, the relation of their own work to the work of the world, past and present, and to the evolution of social institutions. It is the special service of history to give an appreciation of social life. In these grades the children are able to trace from the primary necessities of man his social, industrial, and

political progress. Each year they gain in power to relate their own social activities to a wider circle of human experiences. The social and industrial phases of history are the center of the work throughout the course, but in the higher grades it is possible to give more attention to the political aspect of society.

The same arts are studied as in the primary grades, to the end that they may be carried to a higher degree of perfection. It is thought best to emphasize some one of these arts in each grade, not to the exclusion of the others, but to secure greater thoroughness in the work. The outline of the course of study is not arranged by grades. Certain phases of art with related history are suggested and placed in an order which seems to meet the circumstances of our own school. The plan admits of a variety of arrangements of the subject-matter to meet the conditions of different localities.

TOPICS FOR DISCUSSION.

Relation of history to present social conditions. Relation of the school to the community. School organization and social work.

Interest of the children in the growth of industries and inventions. Occupations that may be represented in school. Relation of historic material to these occupations.

Adaptation of subject-matter to experiences of children of different grades. Interest of children in social and political institutions. Practical work in investigating local conditions.

Outline of course of study. Relation of American and European history in the course of study.

Analysis of methods of teaching history. Correlation of history and other subjects of the curriculum: science, geography, literature, sociology, art.

Expression in constructive work, drawing, painting, clay modeling, and dramatization.

REFERENCES: *The Study of History in Schools*, Report of the Committee of Seven (Macmillan); Mary Sheldon Barnes, *Studies in Historical Method;* Mace, *Method in History;* Hinsdale, *How to Study and Teach History;* Parker, *Talks on Pedagogics;* Dewey, *School and Society;* University of Chicago, *Elementary School Record;* Rice, *Course of Study in History and Literature;* Chicago Institute, COURSE OF STUDY.

OUTLINE OF COURSE OF STUDY.

I. *Metal-work.*—Gardening. Making utensils and tools. Visit to foundries. Visit to shops and buildings to see the results of the iron industry.

The development of tools and implements through the primitive stages of invention. Typical regions and industries of the city. The growth of the city, its settlement and early history. Foreign countries from which the citizens have come; their industries and arts.

REFERENCES: Mason, *Origin of Invention;* Joly, *Man before Metals;* Butterworth, *Industrial Arts;* Hale, *Stories of Invention;* Parton, *Captains of Industry;* Hubert, *Inventors;* Smiles, *Industrial Biography, Ironworkers and Toolmakers;* Smiles, *Men of Invention and Industry;* Parkman, *La Salle and the Great West;* The Fergus Papers; Hull House Maps and Papers; Mrs. Kinzie, *Wau-bun;* Catherwood, *Story of Tonty* and *Heroes of the Middle West;* Roosevelt, episodes from *Winning of the West;* Kirkland, *History of Chicago;* Andreas, *History of Cook County;* Ford, *History of Chicago;* Moses, *History of Chicago.*

II. *The textile industry.*—Sewing, spinning, and weaving. Materials: flax, hemp, wool, cotton, silk. The process of cloth manufacture by primitive methods. Stories of inventions. The factory system.

The household industries of our colonial forefathers, especially the textile industry. A Virginia plantation, a New England farm and village, a Dutch home. Physiographic features that influenced the colonists in different regions. Occupations developed. Stories of the pioneers.

Effects of economic life upon social life and government. The town-meeting. Relation of the historic study of the town-meeting to the school organization. Movement of the pioneers toward the West. Influence of physiography upon routes of travel. Conflict of colonial claims to territory.

The story element in history. The relation of biography to the study of society. Literature of colonial times.

REFERENCES: Figuier, *Primitive Man;* Mason, *Woman's Share in Primitive Culture;* Marsden, *Cotton Spinning and Cotton Weaving;* Weeden, *Economic and Social History of New England;* Bruce, *Economic History of Virginia in the Seventeenth Century;* Alice Morse Earle, *House Life in Colonial Days,* and *Children of Colonial Days;* Doyle, *English Colonies in America;* Lodge, *English Colonies in America,* Eggleston, *The Beginners of a Nation;* Fiske, *Old Virginia and Her Neighbors,* McMurry, *Pioneer History Stories;* Nina Moore Tiffany, *Pilgrims and Puritans;* Hart, *American History Told by Contemporaries,* and *Source Book;* Channing and Hart, *American History Leaflets; Old South Leaflets;* Caldwell, *A Survey of American History.*

III. *Pottery and clay modeling.*—Making, decorating, and glazing of pottery. Making and casting in plaster of statuettes and bas-reliefs. The development of the art of pottery. The development of sculpture. Greek pottery and sculpture. Athens in the time of Pericles; its architecture. Inquiry into the causes of the growth of the city. Influence of the geography of Greece upon its history. Comparison of Athenian and Spartan ideals. The rise of Greek sculpture. The *Iliad* and *Odyssey.* The art of the Homeric age. Athens as a typical study in European history. Order of topics for presentation. Place of Roman history in the course of study.

REFERENCES: Binns, *The Story of the Potter;* Waldstein, *The Art of Phidias,* Gardner, *Handbook of Greek Sculpture;* Tarbell, *History of Greek Art;* Menatt, *The Mycenæan Age;* Plutarch's *Lives;* Herodotus; Busolt, *History of Greece;* Grote, *History of Greece;* Curtius, *History of Greece;* Farnell, *Cult of Greek States;* Cook, *Story of Ulysses; Odysseus, the Hero of Ithaca* (edited by Madame Ragozin and M. E. Burt); Baldwin, *Old Greek Stories;* Andrews, *The Ten Boys on the Road from Long Ago to Now.*

IV. *Bookbinding and printing.*—Binding books and using printing press The invention of printing and the growth of the art. Papyrus and parchment rolls. The illuminated manuscript. Embroidery. Tapestry.

The mediæval city. Florentine and Venetian art. Influences that developed the art of the Renaissance and made beautiful cities possible Relation of art study to the children's hand-work. The guilds of the Middle Ages. The crusades. Search for the Indies. The mariner's compass and other inventions that improved the art of navigation. The Portuguese voyages. The discovery of America. The feudal system and chivalry. Illustrative literature for children's study.

REFERENCES: Bunbury, *History of Ancient Geography;* Tozer, *History of Ancient Geography;* Payne, *History of America,* Vol. I; Fiske, *Discovery of America,* Vol. I; Winsor, *Narrative and Critical History of America,* and *Columbus;* Michaud, *The Crusades;* Symonds, *The Renaissance in Italy;* Kugler, *History of Italian Painters;* Mrs. Oliphant, *Makers of Florence;* Radcliffe, *Schools and Masters of Painting;* Vasari, *Lives of the Painters;* Green, *Short History of the English People.*

V. *Building of an ideal city.*—Woodwork. Mechanical drawing. Practical work in investigating social and political conditions of city; as, streets and transportation, shops and factories, water supply and drainage, parks and playgrounds, architecture and building laws, structure and functions of government. Use of current history.

Local history: exploration; pioneers; growth of village; settlement of surrounding country; effects of the physiography of the region upon its history; modes of travel and transportation; growth of city; foreign colonies; congested districts; typical industries; governmental organization; functions of government; improvement associations; ideal conditions. Relation of the city to the state and nation.

Movement of the American people westward. Physiographic conditions that have affected the movement. Changes in modes of transportation. Development of the factory system of industry. The cotton industry. The wheat industry. Political results of economic changes. Effects of the modern industrial system upon social life.

REFERENCES: Wright, *Industrial Evolution of the United States;* Hobson, *The Evolution of Modern Capitalism: A Study of Modern Machine Production;* Thurston, *Economics and Industrial History;* Hammond, *The Cotton Industry.*

Roosevelt, *Winning of the West;* Turner, *The Significance of the Frontier in American History,* Annual Report of the American Historical Society, 1893, and also

The Fifth Year Book of the National Herbart Society, 1899; Schouler, *History of the United States;* McMaster, *History of the United States;* Stedman and Hutchinson, *Library of American Literature.*

GEOGRAPHY.

ZONIA BABER.

A STUDY of Chicago and its environs will form the starting-point for the work in geography. It will be treated as a type region, and this outline may be applied in general to any district.

Excursions will be made to the Chicago harbor, crib, and lighthouse. Certain commercial activities will be noted about the harbor, and the source of the city's water supply will be studied at the crib. A trip through the Chicago river and the drainage canal to Lockport will afford an opportunity for studying the industrial and commercial activity of the region, a mode of disposition of the sewerage of a large city, and the condition and formation of the Desplaines river valley through which the canal passes. An excursion to Dune Park will afford an opportunity of studying wind as a surface-shaping agent, and the resultant consequences in relation to shore phenomena. A third excursion to the north shore will illustrate stream action and certain glacial phenomena, while a trip to Stony Island will emphasize other aspects of glacier work, and of rock formation.

Trips to the Field Columbian Museum will be made for the study of illustrative material.

In tracing to the sources the material conditions which have contributed largely to the development of this city, we shall make a special study of North America and Eurasia. Drawing, modeling, photographs, stereopticon pictures, maps, and museum material will be employed constantly in the work.

I. INFLUENCE OF THE STUDY OF GEOGRAPHY.

1. *Culture aspect.*—(*a*) Breadth of outlook. (*b*) Intellectual training. (*c*) Æsthetic training. (*d*) Moral influence.

2. *Utility consideration.*—(*a*) In commerce. (*b*) In war. (*c*) In migration. (*d*) Establishment of new enterprises.

II. COURSE OF STUDY FOR ELEMENTARY AND SECONDARY SCHOOLS.

A. BASIS: Previous experience of student. Present environment. (1) Human aspect. Appearance and habits of peoples. Industries, commerce, political geography. (2) Landscape — present and past. Physiographic agents. (3) Geographic distribution of plants and animals, metals, and minerals.

B. MATERIALS: (1) *Literature.* (*a*) Books for teacher; for pupil. (*b*) Magazines — References: *National Geographical Magazine* (Washington, D. C.); *Journal of School Geography* (New York); *Scottish Geographical* (Edinburgh); *Journal of Geography* (London). (*c*) Foreign newspapers and almanacs. (2) *Maps* — relief; chalk models; hachure; physical; contour; political; weather; crop bulletins, etc. (*a*) Use — adaptation of different kinds of maps to grades. (*b*) Making — sand and chalk modeling; mapping of topographical features in vicinity, in contour, etc.; mapping of political districts, blocks, etc.; construction and projection. References: Maps — physical wall maps; Kiepert's series; Habericht-Sydow series; Rand-McNally. Atlases — Andree; Stieler; Berghaus; McMillan; Longman's *New School Atlas.* Political maps — Johnson; Bacon; Rand-McNally. Relief maps — Howells. Contour — U. S. Topographical Sheets and U. S. Topographical Folios. (3) *Globes.* (4) Davis' models; models showing faults, monoclines, etc. (5) Collection of pictures; collection of stereopticon slides.

QUESTIONS: What geographic aspects should receive deepest consideration in a course of study? What aspect of human geography is of greatest importance? Can human geography be taught without natural geography? (Reference: Herbertson, *Man and His Work.*) What is the value of the study of physiography? What consideration should be given the study of landscape from its scenic appearance? At what age does a child appreciate the beauty of landscape? What is the influence of landscape on the æsthetic and moral nature of an individual? What part has landscape played in art? In literature? At what age is a student interested in the history of landscape? What is the difference between the artistic and intellectual appreciation of landscape? Can one obtain an artistic appreciation of landscape he has never seen?

REFERENCES: Shaler, *Interpretation of Nature,* and "The Landscape as a Means of Culture," *Atlantic Monthly,* December, 1898; Geikie, *Scenery of Scotland;* Lubbock, *Scenery of Switzerland;* Hamerton, *Landscape.*

What is the value of a geographic laboratory in teaching? How should a laboratory be used in connection with field work? What part of geographic teaching should be done in the field? What kind of museum material is of greatest value in geographic study? How can the industries in one's environment be used as attractive geographic subject-matter? How can the study of geography be made to enter into the lives of the students? How can the student best enter into the social activities of the world?

EXPRESSION: What is the value of drawing, painting, writing, modeling, and making in the study of geography? In the teaching of the subject? What place should dramatic art occupy in geographic teaching?

CHICAGO.

(Studied as a type city.)

I. THE MAKING AND MEANING OF A CITY.

A. Location. Why?

B. Cause of growth: Relation to areas of production; to regions of consumption.

C. The city needs: food; houses; water supply; heat; light; means of transportation; sewerage; means of protection; government; education, etc.

D. Relation of Chicago to its local geography; to climate,

E. Agents which have contributed to the formation of the local geography of this region?

1. *Lake.*— Lake Michigan: (*a*) Use: commerce; water; fishing industry; sand industry. (*b*) The Chicago "lake flat": appearance; drainage; history. Study present action along the lakeshore in formation of beaches, bars, spits, cliffs. Reproduce similar forms in laboratory. (*c*) Harbors: Conditions for a good harbor. How maintain one? Necessity of lighthouses and life-saving stations. Location of great cities of the world which have good harbors.

REFERENCES: Salisbury and Alden, *Geography of Chicago and Its Environs;* Shaler, *Beaches and Tide Marshes* (A. B. Co.); Davis, *Physical Geography;* Tarr, *Physical Geography;* Russell, *Lakes of North America.*

2. *Rivers.*— The Chicago river, Calumet river, and Desplaines river. (*a*) How have these rivers contributed to the growth of Chicago? (*b*) Relation of the Chicago and Calumet rivers to the harbors. (*c*) Relation to the drainage of the city. (*d*) Nature of water parting between Chicago river basin and the Desplaines and the Calumet river basins; instability of water partings. (*e*) Source of water supply. (*f*) Physiographic action of a river. (Study ravines along north shore and stream action in laboratory.) Locate rivers of the world having notable cañons, large deltas, and flood plains.

REFERENCES: Geikie, *Earth Sculpture, Text-Book of Geology,* and *Physical Geography;* Tarr, *Physical Geography;* Russell, *Rivers of North America;* Scott, *Geology;* Roberts, *The Earth's History;* Mill, *Realm of Nature;* Shaler, *Aspect of the Earth;* Gilbert, *Henry Mountains,* U. S. Geological Survey.

3. *Glaciers.*—The contribution of glaciers to the local geography of Chicago. Excursions to Stony Island and Highwood. (*a*) Topography; nature of materials that compose the landscape; source of materials. (*b*) Extent of glaciation in North America; in Eurasia. (*c*) Location of existing glaciers in mountains and in polar regions. (*d*) Meteorological conditions favorable

to the formation of glaciers. (*e*) Movement and work of glaciers. (*f*) Proofs of different glacial epochs. (*g*) Was the North American continental glacier beneficial or detrimental to the areas affected? (*h*) What would have been the probable result, had the glacier reached the Gulf of Mexico? (*i*) What would be the probable condition here, had the glacier period never occurred?

REFERENCES: Salisbury, *Journal of Geology*, Vols. I and IV; Davis and Shaler, *Glaciers;* Davis, *Physical Geography;* Scott, *Introduction to Geology;* Chamberlin, *Terminal Moraine*, Third U. S. Geological Survey; Russell, *Glaciers of North America;* Geikie, *Earth Sculpture.*

QUESTIONS: In what grade would you introduce the study of glaciers, if you lived in a glaciated area? In a non-glaciated area. Why? What aspect of the subject would appeal to the different grades?

4. *Wind.*—What aspect of Chicago's local geography is due to wind? Excursion to Dune Park. (*a*) Appearance of dunes and associated swamps. Origin. Source of sand. Use of sand dunes. (*b*) Location of the dune areas of the world. Account for location. (*c*) Influence of wind on the water of the lake; in distribution of plants and animals; on sanitary condition of this city.

REFERENCES: United States weather maps; Davis, *Meteorology*, and *Physical Geography;* Terrell, *Popular Treatise on the Winds;* Waldo, *Elementary Meteorology;* Archibald, *The Story of the Atmosphere;* Gregory, *Elements of Physiography.*

QUESTIONS: In what grade should the study of the wind begin? What is the educational value of United States daily weather maps? What grades can profitably use the thermometer, barometer, and anemometer? How can the child's interest in kite-flying, balloons, and boat-sailing be utilized in teaching the subject of the winds?

II. NORTH AMERICA'S CONTRIBUTION TO CHICAGO.

Influence of the great central plain. If Rocky Mountains were located a thousand miles to the east, what would be the effect? Had the long slope of North America been interrupted by mountains in the region of the mouth of St. Lawrence, what would have been the effect upon Chicago?

NORTH AMERICA.

I. Consideration of North America as a great land mass in form, shape, size, drainage, and relation to the other continents of the globe.

1. *Climate.*— Prevailing winds. Movement of storms in the United States. Distribution of heat. Southern limit of the winter isotherm of 32°. Distribution of rainfall; snowfall. What would be the effect on the climate of North America if the eastern and western highlands had been reversed in position? What would be the effect on the climate of the plain if a high range of mountains crossed the northern country from east to west? What would be the effect upon this region if the Gulf of Mexico and the Caribbean Sea were land?

2. *Western highlands.*— Extent, altitude, appearance, and formation of Rocky Mountains, Sierra Madre mountains, Sierra Nevada mountains, Coast Range, Mexican Plateau, and Great Basin. Characteristics of river basin found in the western slope of the great highland mass, Colorado, Sacramento, San Joaquin, Columbia, Fraser, Yukon. What attractions for man does this western highland mass possess? What are the influences, both evil and good, of a desert or semi-desert region on the rest of the continent? For agricultural purposes, which is to be preferred, an irrigated region or a region of constant rainfall?

3. *Great central plain.*— Extent; elevation; winter and summer appearance; glaciated area; account for lakes; non-glaciated region. Characteristics of the river basins: Mississippi, Mackenzie, Hudson Bay system. Value of the great plain in the development of the continent. Would a different arrangement of lowlands and highlands improve the continent as a home for man?

4. *Eastern highlands.*— Extent, appearance, geologic formation of (*a*) Canadian highlands; (*b*) Appalachian system: New England mountains; Blue Ridge; Appalachian valley; Alleghany plateau; Piedmont. Account for the position of Delaware, Susquehanna, Potomac, New, and Tennessee rivers. What is the effect of the Piedmont region on the rivers which cross it? What is the value of the Appalachian highlands to the present inhabitants of the United States? In what way did the mountains aid the colonists? What influence did they exert on the Civil War? (*c*) Characteristics of St. Lawrence river basin.

5. *Coastal plain.*— Extent; appearance; formation; agricultural value. What influence did the coastal plain exert on early settlement? On the Civil War?

6. *Past geographies of North America.*— How are the past aspects of a continent obtained? What are the evidences that North America has had different coast lines? What are the evidences that the continent has passed through many changes of climate? What proofs are there that the topography has changed? Visit Field Columbian Museum. Study geologic exhibits.

MATERIALS which will be used in the development of the subject: relief, physical, contour, geologic maps of North America and United States; geological portfolios; United States weather maps; crop bulletins; photographs; projected pictures; charts; diagrams.

REFERENCES: Mill, *International Geography; Compendium of North America;* Reclus, *Earth and Its Inhabitants;* Shaler, *The United States of America;* Davis, *Physical Geography; National Geographic Monograph;* Willis, *The Northern Appalachians;* Hayes, *The Southern Appalachians;* Davis, *Physical Geography of Southern New England;* Russell, *Rivers of North America;* Russell, *Lakes of North America;* Russell, *Volcanoes of North America.*

In what grade should continental study be introduced? What kind of

maps should be used at the beginning of geographic study? How can a map be used to perform its function as a symbol? Why do maps stand in the way of imaging the landscapes which they represent? What laboratory experiments would aid in imaging North America? What aspect of the country appeals most to younger pupils? When should the physical geography of the continent be taught?

EURASIA.

I. Why is Europe the center of interest of civilized people? Why is Asia of particular commercial and political interest at present? What regions are most attractive to the people of the Occident?

II. *Topography.*—(1) Size; compare with North America. (2) Location of mountains, plains, and plateaux. Compare the continental arrangement of plains, plateaux, and mountains with that of North America. Is the arrangement of mountains and plains most advantageous for man's occupation? Had the location of mountain ranges been similar to that of North America, would it have been better for civilization? Had the great plateau belt been in the northern part of the continent, and the plains in the southern part, would it have been better for human habitation?

III. *Drainage.*—Locate Arctic, Pacific, Atlantic, Indian, and inland systems. What effect have the drainage systems had upon the development of the continent? What river valleys of Eurasia have been "cradles" of early civilization? Why? Which are the most important rivers as highways at present? Which are most important to agricultural interests for irrigation? If the rivers of the Arctic system flowed south instead of north, would their value to man be increased or diminished? Why?

IV. *Prevailing winds.*—(1) Influence of westerlies. (2) Influence of monsoons. (3) Influence of trades.

REFERENCES: Mill, *International Geography;* Stanford, *Compendium of Asia,* and also *Compendium of Europe;* Mill, *Realm of Nature;* Reclus, *Earth and Its Inhabitants: Asia, Europe;* Sven Hedin, *Through Asia.*

CHINESE EMPIRE.

I. *Topography of eastern Asia.*—(1) Plateaux: Tibet, Pamir, Gobi. (2) Mountains: Himalaya, Kuenlun, Altyn, Tagh, Altai, Yablonoi, Khingan, Tsin-ling-Shan. (3) Plains of China: origin; use. (4) Rivers: Yang-tse-Kiang, Hoang-Ho, Si-Kiang, Tamir, Amur.

II. *Climate.*—(1) Winds; influence of high plateaux; deserts; typhoons. (2) Rain: Account for summer rains. Influence of fringing islands.

III. *Soil.*—(1) Loess region: extent; theories of origin; use; influence on Chinese civilization. (2) Red earth region: extent; account for productivity. (3) Alluvial plain: formation; agricultural uses.

IV. *Products.*—(1) Agricultural: national standing of farmers; government encouragement; manner of soil cultivation. (2) Minerals and metals:

extent of coal deposit, gold, silver, jade, copper, etc. (3) Manufactory: home manufactures; how carried on; introduction of factories.

V. *Cities.*— Peking, Cheefu, Shanghai, Hong Kong, Canton, Nanking, Hankow. Plan of building cities; pavement; domestic and religious architecture; means of procuring water, light, and heat; transportation facilities in north and south China.

VI. *Education.*— Describe a Chinese school. Describe examination in Peking or Canton. Influence of education on government.

VII. *Present political condition.*— Boxer movement an incident in the battle between Occident and Orient. International interest in political and commercial conditions in China.

History: Short story of China's past.

QUESTIONS: What constitutes China's greatness? What causes China's weakness? What can the Occident learn from the Orient? Should Russia control Manchuria? What justification is there for England's control of Kowloon, Hong Kong, Wei-hai-Wei? Germany's occupation of Kiao Chau? France's claim to Hainan? What was the influence of the Chinese-Japanese war? What do you predict for the future of China?

REFERENCES: Williams, *Middle Kingdom;* Huc, *Chinese Empire,* and *Travels in Tartary, Thibet, and China;* Mill, *International Geography;* Stanford, *Compendium of Asia,* Vol. I; Reclus, *Asia,* Vol. II; Holcombe, *The Real Chinaman;* Smith, *Village Life in China, Chinese Characteristics;* "Why the Chinese Dislike Foreigners," *Outlook,* Vol. LXVII (1901), pp. 216–21; "Remoter Sources of Troubles in China," *Outlook,* Vol. LXVI (1900), pp. 879–83; "Sources of Trouble in China," *Outlook,* Vol. LXVI (1900), pp. 1036–41; "Anti-Foreign Crusade in China," *Outlook,* Vol. LXVII (1901), pp. 113–18; E. Reclus, "Vivisection of China," *Atlantic,* Vol. LXXXII (1899), p. 329; Hart, "China Reconstruction," *Fortnightly,* Vol. LXXV, pp. 99–193; Bird Bishop, *Yangste Valley;* Yan Rhou Lee, *When I Was a Boy in China.*

INDIA.

I. *Influence* of India on present international problems.

II. *Conditions* which have contributed to the development of the Indian civilization.

III. *Location* in relation to other nations.

IV. *Size and shape.*

V. *Topography.*— Its influence upon climate, products, and people; peninsular region or Dekkan; Indo-Gangetic alluvial plain; Himalaya and Suliman mountains. (See physical map.) (1) Mountains: Influence of Himalaya mountains, Aravalla hills, Vindhya range, Satpura range, Western Ghats, Eastern Ghats. (2) Rivers: Location and value of Indus, Ganges, Brahmaputra, Narbada, Godavari, Kistna, Cauvery. Which rivers have sacred influence? Which have delta plains? Which have valleys corresponding in shape to those of "north shore"? Influence of Ganges delta plain on development of India. Commercial aspect of each of the above rivers. Use in irrigation.

VI. *Geology.*—Influence upon topography and products. Location and extent of alluvial, basaltic, and archæan formations. (See geology map.)

VII. *Rainfall and climate.*—Continental climate, December to May, during northeast monsoons. Effect of the Himalayas and Iran. (2) Oceanic climate, June to November, during southwest monsoons. Effect of Indian Ocean. (3) Account for cold weather, January and February; hot weather, March to May; rainy season, southwest monsoon, June to October; retreating southwest monsoon or so-called northeast monsoons period, November to December. (4) Effect of Himalayas, Western Ghats, and Arakan mountain ranges on rainfall. (5) Locate areas of constant rainfall; areas of constant drought; areas of uncertain rainfall. Locate regions most liable to famine and explain cause. (6) Irrigation. (*a*) Source of moisture: rain, rivers, underground reservoirs, lakes, and surface reservoirs. (*b*) Locate regions where rain is sufficient for crops; "black cotton soil" regions, which act as sponge in retention of moisture; regions where wells are employed, where surface reservoirs are used. (See geological map.) Why are tanks and lakes generally in the archæan? Wells in the alluvial tracts? Why neither is necessitated in the trap area.

VIII. *Crops.*—(1) Food crops: wheat, rice, millet, barley, sugar, spices, etc. (2) Oil seeds: linseed, rape and mustard, castor, sesamum, ground nut, etc. (3) Fibers: cotton, jute, hemp, rhea, silk, wool, etc. (4) Dyeing and tanning materials: indigo, safflower, etc. (5) Drugs and narcotics: opium, tea, coffee, tobacco, cinchona, Indian hemp, vines and other sources of alcohol, etc. (6) Miscellaneous products: cutch, lac, wild silk worms, india rubber, palm sugar, cocoanut, musk, myrobalan, etc.

IX. *Forests.*—Why has India a comparatively small area of forests? Locate regions where deodar, sal, teak, sandal, caouchouc prevail. (See forest map, *Statistical Atlas of India*, 1895.)

X. *Animals, domestic and wild.*—Predominance of buffaloes and cattle in domestic use. Influence of religious beliefs in preserving wild animals.

XI. *Economic minerals.*—Locate regions which produce coal, iron, oil, and tin.

XII. *People.*—Race, appearance, dress. (1) Cities: Account for few large cities in India. Contrast urban population of India, 5 per cent., with the urban population of England, 53 per cent.; meaning of each. (2) Languages: Account for the existence of eighty languages in India. Where are the Dravidian languages principally found? The Aryan languages? (3) Religions: Hinduism, Buddhism, Janism, Sikhism, Mohammedanism, Animism, Christianity. (See map of prevailing religions, *Statistical Atlas of India*, 1895.) Effect of religions on industries, society, architecture, and art.

XIII. *Political divisions.*—Bengal, Rajputana, Northwest Provinces, Panjab, Sind, Bombay Presidency, Madras, Haidrabad, Mysore, Tranvancore and Cochin, Kashmir, Assam, Burma, Nikobar, Lakadiv, and Maldiv

islands. (1) Relation of native state to British government. (2) Government of British India. (3) Non-British states in India. Locate Portuguese India, French possessions, Nipal and Bhutan. Why not under British rule?

XIV. *History.*— Brief history of India. Compare with the history of China. Influence of religion on the lack of historic interest of the Aryan Indians. Has British rule been beneficial or detrimental to India? Why? What is your solution of the famine trouble?

EXPRESSION: Model and draw, in color, relief map of India in dry and wet seasons. Draw a typical Asiatic Indian.

MATERIALS: The subject will be illustrated by photographs, stereopticon views, products of India, manufactured and natural, books and work of Indian school children.

REFERENCES: *Statistical Atlas of India*, 1895; Mill, *International Geography;* Stanford, *Compendium of Asia*, Vol. II; Reclus, *Earth and Its Inhabitants*, Vol. III; Hunter, *The Indian Empire*, and *Brief History of Indian People;* Murray, *Hand-Book of India, Burma, and Ceylon;* Alfred Lyall, *The Rise and Expansion of the British Dominion in India;* Ferguson, *History of Indian and Eastern Architecture.*

The above outline is intended as an aid in the study of the subjects herein considered. Such part of it will be completed during the summer term as time permits.

MATHEMATICS.

GEORGE W. MYERS AND GERTRUDE VAN HOESEN.

THE TEACHING OF MATHEMATICS IN THE SECONDARY SCHOOL.

GEORGE W. MYERS.

IT is believed that a sound method of presenting mathematical truth will give due consideration to both theory and practice. Theory without practice is apt to be inert and inane, while practice without theory is dangerous, if not wasteful. Due regard will be paid to both these aspects of mathematical training, so far as time will admit, though special stress will rest upon "the doing" as a means to "the knowing." The construction and use of inexpensive apparatus for field work in connection with geometry, astronomy, and geography will be given some attention.

I. A general survey of the subjects of geometry, algebra, and trigonometry with reference to their underlying principles.

II. The amount and kind of geometrical and algebraic training with which the pupil should enter the high school.

III. The purpose of geometry and algebra in the secondary school, and the relation of these sciences to other subjects of the high school: (1) For students who will not go beyond the high school. (2) For students who expect to attend a university, or technical school. (3) Use of home-made apparatus.

IV. Should algebra and geometry be taught simultaneously? (1) Considered from standpoint of subject-matter. (2) Considered from standpoint of teacher's preparation.

V. The practical aim of the study of algebra is a working knowledge of the equation; the theoretical aim is a study of functions. (1) The use of graphical methods. (2) Study of the equations needed in mechanics and other branches of physical science.

VI. Exemplification of algebraic principles by arithmetical numbers.

VII. The proper place for teaching of quadratic equations, radicals, and logarithms.

VIII. Classification and study of algebraic equations with reference to degree.

IX. A study of factoring with reference to the following three principles: (1) A factor of each term of a polynomial is a factor of the polynomial. (2) The difference of like powers of two numbers is divisible by the difference of the numbers whenever the exponent of the powers is an integer. (3) If an algebraic expression of nth degree (n being a positive integer) in x vanishes when x is replaced by r, $x - r$ is a factor of the expression.

X. Field work in geometrical surveying.

XI. The preparation of plans for teaching typical lessons.

XII. The place and relation of high-school trigonometry.

THE TEACHING OF INTERMEDIATE ARITHMETIC.

GEORGE W. MYERS.

I. Reasons urged in the past for the teaching of arithmetic: (1) The necessities of measurement and valuation. (2) A good introduction to philosophy (Aristotle). (3) Requirements of business in casting and keeping accounts. (4) Demands of scientific classification and industrial conditions. (5) Other reasons and validity of those enumerated.

II. Reasons for teaching arithmetic today: (1) Demands of mental discipline and culture. (2) To train the number sense. (3) To give the mind an efficient tool for the adaptation of physical and industrial forces to human needs.

III. A survey of the scope of the work to be covered from the fifth to the eight grade, inclusive.

IV. The origin, nature, and function of the number idea in measurement and counting. (1) Four stages to be passed before number becomes a really useful factor in thinking. (2) Province of inductive and of deductive methods in the grades. (3) The function, importance, and mode of securing the necessary drill in the arithmetical operations.

V. What should be the abstract outcome of the number work of Grades I–IV ?

VI. Distinguishing characteristics of number work of Grades V–VIII. (1) Place, kind, and relation of the geometrical and algebraic work of these grades. (2) Changes needed in the seventh and eight grades to adapt the work of the grades to that of the high school.

VII. What arithmetical subjects may be regarded as of so little educative or practical value that they may give way to the algebra and geometry? (1) Subjects not adapted to modern scientific and industrial conditions. (2) Subjects that may be more economically treated by the methods of the advanced mathematics. (3) Subjects in which the language alone constitutes the difficulty.

VIII. Qualifications of a good teacher of modern intermediate arithmetic.

IX. Essential characteristics of a good text-book for intermediate arithmetic.

X. Relation of the arithmetic to other lines of work.

XI. Field and laboratory work for intermediate grades.

XII. Preparation of plans and doing of field work.

PRIMARY MATHEMATICS.

GERTRUDE VAN HOESEN.

LABORATORY COURSE.

THIS course has been planned with the year's work as a basis. When the data have been obtained, the work will be considered from the standpoint of adaptation to grade. In order to do this, special attention will be given to the teaching of the fundamental operations, fractions, and decimals, wherever the work demands their use.

SOILS.

I. Classification in relation to locality, *i. e.*, garden, farm, swamp, forest, or lakeshore. (1) Examination as to mechanical constituents. (2) Examination as to properties: (*a*) percolation of water; (*b*) capacity to prevent evaporation; (*c*) capillarity; (*d*) inference in regard to the percentage of the

different constituents in the various soils. (3) The relation of the earthworms to good soil. (4) Examination of soils in regard to physical constituents.

II. Examination of plants from the different localities. (1) Does the difference in soil affect the constituents or growth of the plants? (2) Comparison of plants from the different areas as to roots, stem, and leaves.

WATER.

The relation of moisture to plant life. (1) Proof that plants absorb water. (2) Relation of the amount of water absorbed to the amount transpired. (3) Relation of the amount transpired to the leaf area. (4) Estimate the amount of water transpired from a small tree. (5) How much water has the tree at its disposal? (*a*) Find the volume of soil within reach of the roots. (*b*) Estimate the amount of water in this soil. (6) Effect of transpiration from land covered with forests. (7) Study of evaporation. What affects the rate? (8) What amount of water is added to supply already in soil? Keep record of rainfall. (9) Use of water to the plant. (*a*) Test samples of the water which has transpired and that which the roots absorb. Inference. (*b*) Find the constituents of the fruit, leaves, wood, and soil of different trees.

TEMPERATURE.

Relation of temperature to growth. Use the sunshine and weather charts to find some of the causes for the change in the landscape.

GROWTH.

Determination of the growth of trees. The use of the records made of the physical measurements of the children.

The problems that come up in connection with manual training and cooking, and those also that the teachers wish to solve in connection with their other work, will be considered in this course.

SPEECH, ORAL READING, AND DRAMATIC ART.

MARTHA FLEMING.

THE training in these classes will be adapted to the needs of the teachers in the schools.

The division of the class into primary- and grammar-grade teachers is nominal. The work of the two divisions will be practically the same, and, if necessary, can overlap.

I. *Expression.*— Expression is the natural result of all thinking. Expression has three functions: first, its physical function, the training and growth of the body; second, its intellectual function, reaction upon thought, for without expression educative thought is impossible; third, its moral function, the development of motive. These three are in reality one in action. Any attempt to separate them is fatal to all.

Expression is a necessity of growth, a revelation of power, of one's largest self and highest possibilities. Definite, clear thinking produces definite, clear expression. Vague, indefinite thinking produces vague, indefinite expression. It is uncertainty that paralyzes.

Each mode of expression has its own particular reactive function. Form, necessary to any clear imaging, is realized by the plastic arts — a closer analysis of form by drawing, of color by painting, of complete synthesis by writing. The product of each mode of expression reinforces all the others.

II. *Reading.*— Reading is *thinking.* It realizes ideas, focuses experiences, and forms habits. It is incidental to all studies. Compare it with observation as a means of thinking.

III. *Oral reading.*— A mode of expression. Compare reading and talking as modes of expression. Function. Relation to other modes. Agents of expression. Motives governing the desire to read aloud. Ideal conditions. Value of story-telling by children as a help to oral reading; of discussions on subjects of interest in the social life of the school; of drill upon literature committed to memory; of dramatic presentations. Drill. Its use. Is there too much oral reading in the school? Shall a child who is reading aloud be allowed to struggle with the pronunciation of a word? How keep him unconscious of his difficulty? Function of sight-reading. Material for sight-reading.

IV. *Dramatic representation.*— The dramatic instinct in primitive peoples. Its manifestations in children. What part does it play in the child's development? Significance of children's plays, imitations, impersonations, and love for dramatic stories.

Is dramatic presentation the child's own mode of expression? Its special function. Relation to other modes of expression — pictorial art, music. How shall it be utilized in the school? Value to the teacher of a knowledge of the history of dramatic art and of the construction of a drama — its essential characteristics, its relation to life, its limitations, and the function of costume and scenery.

Relation of the story to the drama. Dramatic representation of stories. Characteristics of a story which lends itself to dramatization.

V. *Selections of literature.*— Dramatic literature should be chosen for drill. It should appeal to the higher emotions — love, courage, patriotism; to the sense of beauty and rhythm. It should have the characteristics of a good play. The images should crowd each other. The thought and

emotion should be within the child's grasp, or relatively so. It should be used incidental to all other studies at the point and time when the connection is closest. It should call into strong, broad action all the agents of expression. Skill is gained under the inspiration of an aroused imagination. Analysis and interpretation of selections of literature adapted to children in different grades. Lists of selections that may be used with history, geography, and science in the different grades. Principles upon which a story or selection may be cut or adapted for oral reading. How to study a selection for oral reading. How to incite children to study a selection for oral reading. Value of silent, independent study of text. Study should be continued until some tangible result in expression is possible. Over-analysis. Criticism. Self-consciousness. Affectation. Genuine expression. Genuine quality, good or bad, is unconscious of itself. Study of individual children. Children as judges of literature.

The literature used in these classes will be that which is most closely related to the subject-matter taught in history and nature study. As a preparation for this work, the teacher would do well to select a scene from a drama or poem, study it, live with it, and come to the class ready to express what it means to her. It is suggested that some preparation be made upon the following selections:

Susan Coolidge, "How the Leaves Came Down;" Robert Louis Stevenson, "My Shadow;" George McDonald, "The Wind and the Moon;" Robert Browning, "The Pied Piper" and "Hervé Riel;" Joel Chandler Harris, "The Tar Baby;" Longfellow, "Paul Revere's Ride;" *Julius Cæsar*, Act I, scenes i and ii; Sidney Lanier, "Who Stole the Bird's Nest?" "Owl against Robin;" Victor Hugo, "The Gamin;" Buchanan Read, "Sheridan's Ride;" Bret Harte, "John Burns of Gettysburg;" Walt Whitman, "Oh, Captain, My Captain!" Seton Thompson, *Wild Animals I Have Known;* Kipling, *The Jungle Books;* Lincoln's speech at Gettysburg; Grady, *The New South;* Irving, *Rip Van Winkle;* Scott, *Ivanhoe.*

VI. *Gesture, voice, and speech.*— This mode of expression involves the whole body and demands health, physical freedom, and responsiveness. Special exercises for carriage and bearing, breathing, resting, for freedom and control, are, therefore, a part of the preparation for oral expression. The body is an instrument, and physical health and freedom determine, in a large measure, the possibilities of expression. Delsarte says: "Strength at the center, freedom at the surface, is the true condition of being."

1. *Gesture.*— Gesture a universal language, modified by nationality, temperament, and habits of life. Function of gymnastics as a preparation for expression. Gymnastics which have the forms of expression. Movements which express fatigue or physical weakness; movements which are the spontaneous expression of thought and emotion. Pantomime: the expression of thought and feeling by bodily movements. Bearings, attitudes,

inflections. Poise. Relation to health, to expression. Sitting, standing, walking. Good positions in seat-work and recitations. Exercises, plays, and games for making good carriage of body habitual. Rhythmic movements to music. Energy. Relation to health and expression. Control and direction of energy.

2. *Voice.*—Power and significance of the voice in spoken language. Voice quality and intonations the expression of character, of emotional life, and of physical conditions. Voice in speech and song. Training the ear to distinguish voice qualities. Management of breath. Force, pitch, quality, inflection, accent, emphasis, pause, rhythm, purity, flexibility, responsiveness. Care and management of children's voices.

3. *Speech.*—Is there a standard English? How determined? Provincialisms; dialects. Training the ear to recognize speech qualities, to discriminate the elements—vowels, glides, and consonants. Bell's vowel and consonant tables. Training the speech organs. Formation of vowels; articulation of consonants. How shall the child be helped to speak good English? Value of phonics. Value of drill upon words. Habits of speech. The most economical way of correcting bad habits. Causes of speech defects: (*a*) Defective hearing. (*b*) Abnormal conditions of mouth and throat, such as enlarged tonsils, adenoid growths, narrow arch, mouth breathing, tongue-tie, and defective arrangement of the teeth. (*c*) Imitation of speech defects. (*d*) General nervous conditions. Diagnosis and treatment of speech defects. Value of such knowledge to the teacher.

VII. *Exercises.*—History and significance of the great festivals common to the race—Thanksgiving, Christmas, Easter. National festivals and holidays—Washington's and Lincoln's birthdays, Memorial Day. Educational value of morning exercises. All exercises should grow out of the work of the school, and should be the culmination of study in some subject. Use of art, music, and literature in these exercises. Basis for arrangement of programs. Suggested programs.

VIII. *Value of dramatic training for the teacher.*—Imitation is a potent factor in education. Action is one of the first things imitated. The teacher's habits of sitting, standing, walking, breathing, habits of speech, quality and use of voice, are imitated by the child. You may tell a child to sit up, to stand up, or to walk erect, but if *you* do not sit up, stand up, or walk erect yourself, your precept falls upon deaf ears. Gesture is truth to the child. He does not *hear* what you *say*, he *sees* what you *do*.

Effects of the teacher's voice upon the child's voice, and upon his moral nature. If the teacher's English speech is provincial, she cannot by any precept teach the best English. If the children are to read well, the teacher must have a deep-seated, abiding belief in the educative value of this mode of expression.

If the teacher does not spontaneously use voice, hand, face, and body in expression of thought, the children will become as narrow, as restricted, as

wooden, as unexpressive, and as uninteresting as she is herself. If the teacher undervalues emotion and does not see its direct relation to thought, the children will soon learn to think that emotion must be concealed. The child reflects not only what we are, but also our ideals.

Other things being equal, the teacher with dramatic power and dramatic training is a better teacher of any subject than one limited in this power and training.

ART.

JOHN DUNCAN, GEORG THORNE-THOMSEN, ANTOINETTE B. HOLLISTER.

ART IN RELATION TO HISTORY AND LITERATURE.

JOHN DUNCAN.

I. CONTEMPORARY HISTORY.

THE object of this course is the study and the recording of the life going on about us. The child spontaneously attempts to picture this life, draws engines and ships and bridges, and people engaged in every occupation. The course is planned to fit the teachers for the work of directing and developing this child art.

Streets and traffic: street-cars (trolley, cable, elevated), wagons, carts, cabs, automobiles, bicycles.

Foot-passengers: the postman, policeman, popcorn-man, fruit-vender, coal-man, newsboy, peddler.

Architecture: stores, post-office, library, museum, picture gallery, theater, bank, asylum, hospital, church, schoolhouse, bridges, tunnels.

Homes: occupations of home, children's games.

Gardens, parks, playgrounds.

Railways and railway stations, locomotives.

Ships and shipping docks.

Soldiers, barracks.

Factories (spinning and weaving), potteries, foundries, workshops (carpenter's, blacksmith's, tailor's, shoemaker's).

House-building, stone-cutting, paving.

Foreign areas — racial types.

Materials for this work: drawing pencil, fountain pen, water-colors, sable brush.

II. LITERATURE.

Our subject-matter will be drawn from three sources. During the first two weeks we shall be occupied with the fairy-stories,

that are the delight of the very little folk. The next two weeks we shall take up the Greek stories, which are more suitable to the older children; and the last two weeks we shall turn to mediæval legends, which chime with the condition of soul of adolescence. The students will work up the subject-matter in the library, and among the pictures in the school collection. That is to say, they will: (1) get up the spirit of the story; (2) study the archæology of the subject — costume, architecture, furniture; (3) refer to casts, picture-books, and to the school collection of pictures, in charge of Miss Chisholm, to fill up their mental picture, and to suggest and help out with a proper technique.

They will also make rapid sketches from one of their own number, who will act as model, and who will assume a pose or costume on demand. This function of model they will discharge in rotation.

A. FAIRY-STORIES.

We shall begin with the stories told by Mrs. Gudrun Thorne-Thomsen in her course in literature for the primary grades.

1. *The Three Billy-Goats Gruff.*[1]
2. *The Land East of the Sun and West of the Moon.*[1]

As each of these stories can afford us three or four pictures, we may not get any farther during the allotted two weeks at our disposal, but if there is opportunity, we may go on with —

3. *The Three Bears.*
4. *The Pig That Went to Set up House.*
5. *Snow-White.*[2]
6. *The Six Swans.*[2]

B. GREEK STORIES.

In the next two weeks we shall deal with Greek mythology, taking two leading types for especial study:

1. *Athena,*[3][4][5] standing for the stoical ideal. (*a*) As type of temperance (staying the hand of Achilles). (*b*) As type of fortitude (inspirer of active and passive courage). (*c*) As type of prudence (owl-eyed).

[1] ASBJÖRNSEN, *Popular Tales from the North.*

[2] GRIMM, *Fairy Tales.*

[3] JOHN RUSKIN, *Queen of the Air.*

[4] Photographs in school collection.

[5] (LAMB'S) *Iliad* and *Odyssey.*

2. *Apollo*,[1 2] as the embodiment of the epicurean ideal of sweetness and light. (*a*) As sun-god, charioteer. Reason dominating the passions. The Python-slayer. (*b*) As god of music, harmony, poise, balance.

We shall follow with tales of the culture heroes — Hercules,[1 2] Prometheus,[1 3] Theseus,[2] Cadmus,[3] Orpheus, Amphion — as we may find time.

C. The last two weeks we shall devote to the mediæval ideals of charity and chivalry.

1. Love. (*a*) Christ;[4 5 6] (*b*) the Virgin.[4 6 7]

2. Chivalry. (*a*) St. Michael;[4] (*b*) St. George.[8 9]

Then, as there is time, we shall deal with St. Christopher,[8] St. Jerome,[8] St. Anthony,[8 10] St. Martin,[8] St. Francis,[8 10] St. Dorothy,[8] St. Elizabeth, St. Bridget.

REFERENCES.

1. FAIRY-STORIES: Fiske, *Myths and Mythmakers;* Timothy Bunce, *Fairy Tales, Their Origin and Meaning;* Grimm's *Fairy Tales;* Andersen's *Fairy Tales;* Asbjörnsen, *Popular Tales from the Norse.*

2. PICTURE-BOOKS: Hassal and Aldin, *Two Well-Worn Shoe Stories;* Kate Greenaway, *Marigold Garden, A Day in a Child's Life, Under the Window;* Walter Crane, *Flora's Feast, Baby's Own Æsop, The Baby's Bouquet;* Caldecott, *Picture-Book No. 2;* L. Frank Baum, *Mother Goose in Prose;* Chester Loomis, *Mother Goose Pictures;* Carton Moore Park, *A Book of Birds; A Child's Primer of Natural History;* Boutet de Monvel, *Jeanne d'Arc;* Howard Pyle, *The Merry Adventures of Robin Hood.*

3. GREEK STORIES: John Ruskin, *Queen of the Air;* Francis Bacon, *Wisdom of the Ancients;* Bulfinch, *Mythology;* Baldwin, *Old Greek Stories;* William Morris, *The Earthly Paradise, Jason;* Hawthorne, *Tanglewood Tales, The Wonder Book* (illustrated by Walter Crane); Kingsley, *Greek Heroes;* Lamb's *Iliad* and *Odyssey;* Francillon, *Gods and Heroes;* casts of Greek statues in Art Institute, and photographs in our own school collection.

4. MEDIÆVAL STORIES: The New Testament; *Life of Our Lord in Art;* photographs of Gothic and Renaissance art in our own school collection; Mrs. Jameson, *Legends of the Madonna, Sacred and Legendary Art, Legends of the Monastic Orders;* Mrs. Clements, *Handbook of Legendary and Mythological Art; The Little Flowers of St. Francis;* Racinet's *Costume;* Bulfinch, *Age of Chivalry;* Reber, *History of Mediæval Art;* Goodyear, *Roman and Mediæval Art;* Sidney Lanier, *The Boy's King Arthur;* Howells, *A Little Girl among the Old Masters;* Flaubert, *St. Antoine;* Spenser, *Faery Queen.*

[1] BULFINCH, *Mythology.*

[2] FRANCILLON, *Gods and Heroes.*

[3] BALDWIN, *Old Greek Stories.*

[4] The New Testament.

[5] *Life of Our Lord in Art.*

[6] Photographs of Gothic and Renaissance art in school collection.

[7] MRS. JAMESON, *Legends of the Madonna.*

[8] MRS. CLEMENTS, *Handbook of Legendary and Mythological Art.*

[9] SPENSER, *Faery Queen.*

[10] FLAUBERT, *St. Antoine.*

Materials wanted for this work: soft drawing pencil, pad of water-color paper, sable brush, water-colors.

PAINTING AS A MEANS OF IMAGING.

JOHN DUNCAN AND ANTOINETTE B. HOLLISTER.

NOTE: Expression in all its modes is a fundamental means of imaging. The results of expression, then, are to be looked for in mind-growth, and not in the forms of expression. Color is the emphasis and synthesis of forms. Painting is one potent means of studying landscapes. In a typical area of land may be found (1) surface (physiography); (2) vegetation (botany); (3) animal life (zoölogy); (4) clouds, sky, states of atmosphere (meteorology). All these things are in the closest interrelation, each thing depending upon all the others, as in the field study of plant life (ecology). The student, brush in hand, comes in contact with a typical landscape; colors bind the area into one whole, and the whole landscape is the simplest object to be painted. The painting demands close observation. The observer goes naturally from wholes to parts. The painting may be very crude, but if it is genuine, it is good; it expresses in some way the image "seen within;" it is the basis and beginning of better work. Here the careful critic is needed to suggest the main things that the student does not observe. Then comes a new trial. Painting reacts upon and enhances the growing image. The rule is, "Go from wholes to parts": the entire landscape, then a ravine, dune, tree, or shrub; from tree to branch, twig, leaf; keeping in mind the relations.

I. *Outdoor sketching* (field excursions).—(1) Typical landscapes painted as studies of physiography, geology, botany, zoölogy, and meteorology. (2) Parts of selected areas—hill, valley, dunes, ravines, cliffs, lake, shore; work of waves, winds, etc.; swamps—vegetation, animal life.

II. *Schoolroom work.*—On return from field excursions the landscape paintings will be repeated, of course without the presence of the objects. (1) Specimens collected on field excursions studied and painted. (2) Painting of roots showing adaptation to varying conditions of moisture. (3) Foliage, its adjustment to light, moisture, and temperature; function of color. (4) Structure of stems: (*a*) stems that resist strong winds; (*b*) trunks of trees; (*c*) aquatic plants; (*d*) underground stems; (*e*) cross-sections of stems.

III. *Interrelation of plant and animal life.*—Dependence on soil, moisture, and climate. (1) Plants affected by animals. (2) Nature's devices for the protection of plants. (3) Color as a means of protection.

NOTE: From the æsthetic side we may regard the landscape as a conglomeration of lines, tones, and colors from which the artist selects those which best express his subject-matter, and at the same time are in accord with each other and with his own spirit. Lines, tones, and colors affect the emotions much as do musical or unmusical phrases. It is necessary to consider these æsthetic relations, that the feeling aroused be appropriate to the

subject-matter, and that the proper impression be produced with the greatest economy of means.

We must study to bring the landscape within the means at our disposal. For example, we must simplify the infinite variety of nature. The paint box will not permit us to render the intensity of tones as they appear to the eye. They must be transposed, and lines, tones, and colors must be arranged for our æsthetic purposes.

CLAY MODELING.

ANTOINETTE B. HOLLISTER.

THE greater part of the course in clay modeling will be expressive of the work done in science, geography, history, and literature. Through the manufacture of pottery the student will enter more fully into the industrial side of primitive and of modern life. The modeling, decorating, and glazing of pottery will all be done in the school. This work will involve a study of design and will offer a large field for original work.

Historical scenes will be represented in the round and in low relief. These will be cast in plaster or baked in the kiln. The casts may or may not be colored. Literature will be illustrated in the same way. Animals and insects will be modeled, and studies will be made of their homes and habits.

Some modeling will be done of the flora of the region selected for investigation, showing how the form of the plant changes in an effort to adapt itself to changes in its environment, and recording its growth under different conditions.

Should they be required, relief maps will be made in connection with the geography.

CHALK MODELING.

GEORG THORNE-THOMSEN.

AS AN easy means of representing forms of land and water, on the board and on paper, chalk modeling is of great assistance to the teacher and the student of geography. Artistic ability is not so much needed, in this work, as a clear understanding of the landscape forms that are to be sketched.

It will be the purpose in these lessons to help the teachers to form vivid, definite images of typical features of the earth's

surface, and to acquire the power to sketch easily and rapidly such features on the board and on paper. The materials used will be: blackboard and chalk, pencil and paper, and charcoal.

Clay and sand modeling will be used as a preparation for the chalk modeling; the different landscape forms and surface features will be studied from descriptions, photographs, pictures, stereopticon views, maps, and from models. Many of the features—for instance, river valleys, bluffs, beaches, ravines, and sand dunes—can be studied and sketched on the field excursions planned by the geographic department. The teachers will be given opportunity to work out the series of surface types and maps, as outlined below, on paper, to take with them for use in their own schools.

The first topic for consideration will be typical surface features and landscapes characteristic of the continents, such as plains, mountains, rivers, glaciers.

The next topic for attention will be pictorial or panoramic representation of larger sections of surface, as, for instance, river basins, mountain chains, plateaux, bird's-eye views of the continents, etc. The sketches under this head, by combining the features studied before into larger units of surface, form a compromise between map and picture, and serve as an introduction to the next topic, that of relief maps.

After a careful study of the most important features under I and II, the teachers will be prepared to begin the making of relief maps, Topic III.

The last topic relates and applies the work of the previous topics to the study and teaching of the continents; it thus serves the purpose of a review of the whole subject.

DETAILS OF OUTLINE.

PRINCIPLES OF CHALK MODELING—TECHNIQUE.

NOTE.—This part of the outline will not be taken up as a separate topic, but will be related to and discussed with the other topics.

CHALK MODELING AS A MODE OF EXPRESSION.

Aim, not to make finished pictures nor to produce artistic effects, but to describe geographic features clearly, scientifically, and rapidly, with the chalk.

1. Chalk modeling as a representation of mass; significance of term "modeling" (relief); use of lines in analysis of landscape. Economy of time and effort.

2. Stroke: *breadth*, economy, strength; function. Exercises to acquire ease in the handling of material.

3. Composition: essentials and non-essentials.

4. Gesture, its significance in chalk modeling. Relation of slope of surface to direction of stroke: (*a*) Rolling surface—hills, waves. (*b*) Sloping surface—valleys, volcanoes, mountains. (*c*) Level surface—plain, beach, flood plain with winding river. (*d*) Steep surface—bluffs and cliffs, falls. (*e*) Combination of horizontal and vertical surfaces—buttes, mesas, plateaux; cañons and fiords; flood plain with bluffs.

5. The landscape seen from different points of view. (*a*) Perspective: Atmospheric effect; diminution of size, convergence of lines and foreshortening the horizon line; details of foreground; color values, light and shade, shadows. (*b*) Compare use of white material on board, black material on paper.

6. How to show texture of surface: (*a*) Stratified and unstratified rock. (*b*) Alluvial, sandy, and rocky soil. (*c*) Cultivated and uncultivated ground. (*d*) Surface of water, ice.

7. Analysis of characteristics of landscape. (*a*) Slopes; angles of slope; concave and convex surfaces. (*b*) Curves, as beach curves, river curves. (*c*) Natural lines: meeting of surfaces; divides, shore-lines, drainage lines, sky-line. (*d*) Means of showing height, dimensions, magnitude.

I. SURFACE FEATURES AND LANDSCAPE FORMS TO BE CHALK-MODELED.

A. *Coast scenery.*—(1) Waves and breakers. Capes, cliffs, stacks; reefs and islands; isthmuses; beaches, raised beaches; caves; sand dunes; spits, bars, lagoons; bays, estuaries, sounds. (2) Rising and sinking coasts, partly drowned coasts. (3) Appearance of coast-line according to stage of development. (4) Topography of lake flats, Chicago area as a type. (5) Artificially protected coast, harbors, piers, breakwater; lighthouses; wharves. (6) Types of boats.

B. *River scenery.*—(1) Landscape characteristic of upper, middle, and lower course of a river. (2) Deltas and alluvial fans; bars, banks, islands; terraces; types of waterfalls, lakes. (3) Types of valleys, gaps; forms of river erosion of dry or wet plateaux. (4) Successive stages in the wearing down of the land: youth, maturity, old age (cycle of denudation). (5) Human features connected with rivers, as embankments and levees; irrigation canals; dams, locks, bridges. (6) Boats. (7) Underground water: caves, sinkholes, springs; geysers; natural bridges.

C. *Glacial scenery.*—(1) Types of glaciers: valley glacier, continental glacier, Piedmont glacier. (2) Topographic features of glaciated country:

valleys channeled by ice, fiords, cirques. Glacial lakes: rock basins, Swiss lakes, Scotch locks; morainic lakes. Moraines and drumlins; kames and eskers; islands. Glaciated rock-floor with bowlders. Icebergs.

D. *Mountain scenery.*— (1) Types of mountains: mountains by folding — Jura, Alps; block mountains — Oregon ridges, Sierra Nevada; mountains by denudation — table mountains, Scandinavian mountains; laccolitic mountains. (2) Characteristic features of mountain scenery: (*a*) Types of peaks — needles, horns, domes — Castle Crags, Mätterhorn, Pike's Peak. (*b*) Ridges — Alleghany; ranges — Bernese Oberland; systems, chains, cordilleras. (*c*) Valleys — longitudinal, transverse; parks, mountain pass, cirques, edge (*Kamm*). (*d*) Snowfields, glaciers, torrents. (3) Young, old, worn-down mountains (Monadnocks). (4) Volcanoes: (*a*) Lava cone, ash cone. (*b*) Famous volcanoes: Vesuvius, Stromboli, Mt. Shasta, Chimborazo, Fuji-san, Mouna Loa. (*c*) Crater lakes, caldera; volcanic necks, dike. (5) Plateaux: young plateau, deeply dissected plateau, mesa.

E. *Landscape as affected by climate.*— (1) Desert, oasis; tundras, arctic landscapes; steppes and prairies; tropical forests, jungles, savannahs; temperate forests; swampy country; cultivated surface, fields of grain, corn, rice. (2) Trees and plants which have a determining influence on appearance of landscape, as conifers, palms, cactus, mangrove trees. (3) Cloud forms.

F. *Surface features determined by climate.*— (1) Waste slopes and fans. (2) Bad Lands. (3) Topography of interior basins, salt lakes, salinas, playas. (4) Sand dunes of the desert.

G. *Ocean.*— (1) Appearance in quiet, in storm. (2) Arctic sea, floe ice, pack ice, icebergs. (3) Oceanic islands, volcanic and coral islands. Sea bottom with corals. (4) Types of vessels.

II. PANORAMIC VIEWS.

(1) River basins, plateaux, cordilleras, interior basins, cross-sections. (2) Bird's-eye views of the Mississippi basin, the Great Basin, Abyssinian plateau, Nile basin, plateau of Thibet. (3) Of North America from north to south, east to west.

III. MAPS.

(1) Function of chalk-modeled map compared with other maps. (2) Difference between map and picture. (3) Relief maps in sand. (4) Steps in making a chalk-modeled map; question of light and shade; unity of surface; gradation of color as to elevation; contrast of color; elimination of details; fallacy of making a flat surface with highlands superimposed. (5) Map representation of main features of a continent, as river basins, plateaux, mountain chains, hills. (6) Maps of the continents on the board and on paper. (7) Special maps: Egypt, Greece, Italy, India, China. Map of the Chicago area.

IV. PARTICULAR STUDY OF THE CONTINENTS — NORTH AMERICA AND EURASIA AS TYPES.

(1) Map of the continent, sectional maps. (2) Panoramic views. (3) Forms of landscape characteristic of the physiographic areas. (4) Important scenic features of the continent.

The different surface forms will be considered from the point of view of form, and as factors in determining appearance of landscape. The full discussion of these features with regard to their formation and geographic significance will be given in the course in geography.

The detailed outline above is suggestive of the work to be done in chalk modeling, and offers material for the selection of the teachers; it may not be taken up in its entirety, or followed in the order indicated, but will be closely related to the lessons in geography.

APPLIED ART.

CLARA I. MITCHELL, IRA M. CARLEY, IRENE WARREN.

TEXTILE FABRICS.

CLARA I. MITCHELL.

I. *Hand-work.*—(1) Wool-spinning with spindle and wheel. (2) Weaving of belts, bands, squares, cushion covers, and bags on primitive, Colonial, and modern hand-looms. Materials used — carpet yarn, wool-roving, Germantown wool, seine-twine, and silk. Designing of patterns. (3) Basketry. Weaving of willow rattan, Indian splint, and fiber baskets. Dyeing of fibers. (4) Decorative needlework. Designing and embroidery of doilies, cushion-covers, bands, book-covers, and bags. Appliqué. Materials used — leather, linen, and silk.

II. *Study of fabrics.*— Classification of fabrics with regard to use. Quality, weave, weight, warmth, absorptive power, design, color, cost. Method of fabric analysis.

III. *Study of fibers.*—Tests for the textile fibers, silk, wool, linen, and cotton. Qualities. Culture.

IV. *Discussion of children's work in textiles viewed as the study of clothing.* —(1) Hand-work appropriate to different ages: (*a*) Designing. (*b*) Education of color sense. (*c*) Making of looms, mechanical invention. (2) Plans of lessons on fabrics, fibers, and processes, adapted to different grades. (*a*) Science

lessons growing out of the making of looms, spinning, dyeing, and testing of fibers. (*b*) Geography to be taught in studying the origin and culture of fibers, and in the manufacture and distribution of fabrics. (*c*) Outlines of history lessons which will make clearer the industrial and sociological significance of the subject of textiles. (*d*) Some examples of literature, music, and art which form part of the history. (*e*) Excursions to mills, factories, and shops.

BOOKS FOR REFERENCE.

J. Merritt Matthews, *Textile Chemistry;* Watson, *Art of Weaving;* Rock, *Textile Fabrics;* Gilroy, *Art of Weaving;* Bevan, *Textiles and Clothing;* Tomlinson, *Arts and Manufactures of Great Britain*, Vol. I; Muntz, *A Short History of Tapestries;* Champeau, *Tapestry;* Archer, *Wool, Flax, and Linen Fabrics;* Ashenhurst, *Woolen Cloth Manufacture;* Brooks, *Cotton Manufacturing;* Burnly, *The History of Wool and Wool Combing;* Bischoff, *Woolen Manufactures;* Charley, *Flax and its Products in Ireland;* Warden, *The Linen Trade, Cloth Manufacture;* Roberts Beaumont, *Woolen and Worsted;* I. F. Bell, *Jacquard Weaving and Designing;* I. W. Fox, *Mechanism of Weaving;* Richard Marsden, *Cotton Weaving;* Posselt, *Textile Designing, Jacquard Weaving;* Taggart, Brooks, Nasmith, *Cotton Spinning;* U.S. Government Report, No. 33, Agricultural Department, *The Cotton Plant;* No. 39, *Useful Fibers;* Peter Sharpe, *Flax*, Jonathan Ruegg, *Silk;* Hurst, *Silk and Silk Dyeing;* Bowman, *Structure of Wool Fiber.*

DESIGN: Stephenson and Suddart, *Ornamental Design for Woven Fabrics; Oriental Carpets*, pub. by Royal Museum, Austria; Walter Crane, *Claims of Decorative Art;* Franz Sales Meyer, *Handbook of Ornament;* Lewis F. Day, *Nature in Ornament, Principles of Every-Day Art, Planning of Ornament, Anatomy of Pattern, Application of Ornament;* Owen Jones, *Grammar of Ornament;* Racinet, *Polychromatic Ornament;* Lessing, *Oriental Carpet Patterns;* magazines — *Studio* and *The Artist.*

COLOR: Chevreul, *Theory of Coloring;* Wm. von Bezold, *Theory of Coloring;* Mark N. Maycock, *A Class Book of Color;* Prang, *Color in the Kindergarten.*

WOODWORK.

IRA M. CARLEY.

THIS course will take up work in wood with especial reference to constructive design and ornamentation. The work will be carried on jointly by the art and manual-training departments. In order that the class may have the benefit of each individual's experience, each member will be asked to make a design for each of several objects which will be suggested by the teacher or by the class itself. These designs will be looked over with the class, and criticised from the structural and the artistic point of view. This general meeting will take place twice a week, the remainder of the time being given to work in the manual-training shops.

The problems to be considered:

I. *Kind of wood best adapted to particular purposes.*—(1) In regard to strength and hardness. (2) In beauty of grain and color. (3) In regard to its liability to warp. (4) Expense.

II. *Kinds of construction adapted to particular purposes.*—Various methods of construction which may be applied to the same object, according to degree of strength and permanency.

III. *Ornament.*—Kinds of ornament adapted to wood. (1) Wood-carving —designing for wood-carving. (2) Repoussé metal-work applied to wood. (3) Staining; dyeing; pyrography. (4) Inlaying; marquetry.

BOOKBINDING.

IRENE WARREN.

THE elements of bookbinding will be taught as they may be adapted to the constructive work of the grades. Only half-bindings with the lettering will be attempted, as the time is so short.

Each student will be required to furnish himself with a bone folder, a pair of compasses, a straight-edge or tri-square, a binder's knife, and three medium-size books of good material, which shall be bound for practice work. While it is much easier to work on good material than on poor, students are advised not to begin on rare or valuable editions, as they are liable to mistakes in the beginning. Each student will also be required to furnish his own papers and leathers, which will average forty cents per volume.

MANUAL TRAINING.

IRA M. CARLEY AND CORA CHAMPLIN.

THE manual-training department offers a course in woodwork for the grammar grades, and a course for primary grades which will include cardboard work, woodwork of a simple form, work in thin metals, basketry, and illustrative construction. A course in woodworking will also be given in connection with the Arts and Crafts courses.

The object of these courses is to present to the teacher conditions for obtaining the greatest amount of skill possible in the

lessons growing out of the making of looms, spinning, dyeing, and testing of fibers. (*b*) Geography to be taught in studying the origin and culture of fibers, and in the manufacture and distribution of fabrics. (*c*) Outlines of history lessons which will make clearer the industrial and sociological significance of the subject of textiles. (*d*) Some examples of literature, music, and art which form part of the history. (*e*) Excursions to mills, factories, and shops.

BOOKS FOR REFERENCE.

J. Merritt Matthews, *Textile Chemistry;* Watson, *Art of Weaving;* Rock, *Textile Fabrics;* Gilroy, *Art of Weaving;* Bevan, *Textiles and Clothing;* Tomlinson, *Arts and Manufactures of Great Britain*, Vol. I; Muntz, *A Short History of Tapestries;* Champeau, *Tapestry;* Archer, *Wool, Flax, and Linen Fabrics;* Ashenhurst, *Woolen Cloth Manufacture;* Brooks, *Cotton Manufacturing;* Burnly, *The History of Wool and Wool Combing;* Bischoff, *Woolen Manufactures;* Charley, *Flax and its Products in Ireland;* Warden, *The Linen Trade, Cloth Manufacture;* Roberts Beaumont, *Woolen and Worsted;* I. F. Bell, *Jacquard Weaving and Designing;* I. W. Fox, *Mechanism of Weaving;* Richard Marsden, *Cotton Weaving;* Posselt, *Textile Designing, Jacquard Weaving;* Taggart, Brooks, Nasmith, *Cotton Spinning;* U.S. Government Report, No. 33, Agricultural Department, *The Cotton Plant;* No. 39, *Useful Fibers;* Peter Sharpe, *Flax*, Jonathan Ruegg, *Silk;* Hurst, *Silk and Silk Dyeing;* Bowman, *Structure of Wool Fiber.*

DESIGN: Stephenson and Suddart, *Ornamental Design for Woven Fabrics; Oriental Carpets*, pub. by Royal Museum, Austria; Walter Crane, *Claims of Decorative Art;* Franz Sales Meyer, *Handbook of Ornament;* Lewis F. Day, *Nature in Ornament, Principles of Every-Day Art, Planning of Ornament, Anatomy of Pattern, Application of Ornament;* Owen Jones, *Grammar of Ornament;* Racinet, *Polychromatic Ornament;* Lessing, *Oriental Carpet Patterns;* magazines — *Studio* and *The Artist.*

COLOR: Chevreul, *Theory of Coloring;* Wm. von Bezold, *Theory of Coloring;* Mark N. Maycock, *A Class Book of Color;* Prang, *Color in the Kindergarten.*

WOODWORK.

IRA M. CARLEY.

THIS course will take up work in wood with especial reference to constructive design and ornamentation. The work will be carried on jointly by the art and manual-training departments. In order that the class may have the benefit of each individual's experience, each member will be asked to make a design for each of several objects which will be suggested by the teacher or by the class itself. These designs will be looked over with the class, and criticised from the structural and the artistic point of view. This general meeting will take place twice a week, the remainder of the time being given to work in the manual-training shops.

The problems to be considered:

I. *Kind of wood best adapted to particular purposes.*—(1) In regard to strength and hardness. (2) In beauty of grain and color. (3) In regard to its liability to warp. (4) Expense.

II. *Kinds of construction adapted to particular purposes.*—Various methods of construction which may be applied to the same object, according to degree of strength and permanency.

III. *Ornament.*—Kinds of ornament adapted to wood. (1) Wood-carving —designing for wood-carving. (2) Repoussé metal-work applied to wood. (3) Staining; dyeing; pyrography. (4) Inlaying; marquetry.

BOOKBINDING.

IRENE WARREN.

THE elements of bookbinding will be taught as they may be adapted to the constructive work of the grades. Only half-bindings with the lettering will be attempted, as the time is so short.

Each student will be required to furnish himself with a bone folder, a pair of compasses, a straight-edge or tri-square, a binder's knife, and three medium-size books of good material, which shall be bound for practice work. While it is much easier to work on good material than on poor, students are advised not to begin on rare or valuable editions, as they are liable to mistakes in the beginning. Each student will also be required to furnish his own papers and leathers, which will average forty cents per volume.

MANUAL TRAINING.

IRA M. CARLEY AND CORA CHAMPLIN.

THE manual-training department offers a course in woodwork for the grammar grades, and a course for primary grades which will include cardboard work, woodwork of a simple form, work in thin metals, basketry, and illustrative construction. A course in woodworking will also be given in connection with the Arts and Crafts courses.

The object of these courses is to present to the teacher conditions for obtaining the greatest amount of skill possible in the

given time, and to consider the aims of educational manual training and the methods of carrying on the work. For the acquisition of skill, the series of models illustrated in this number has been planned, with the purpose of presenting a number of exercises involving the use of all the common woodworking tools. The attempt has been made also to arrange a progression of difficulties which shall keep pace with the increasing power of the worker.

This particular set of models is not intended to serve in any way as a basis for a manual-training course for children, but for help to teachers in planning work for their own pupils, definite suggestions in the form of drawings and descriptions will be furnished.

COURSE FOR GRAMMAR GRADES.

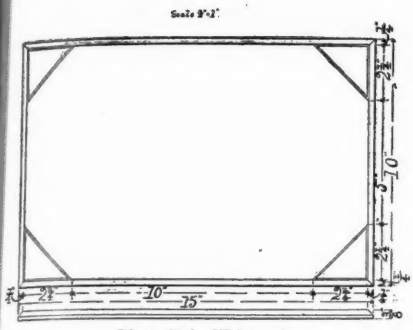
I. The history of the manual-training movement. (1) The growth from the industrial to the educational ideal.

II. The aims of manual training as a factor in education. (1) Training in motor control. (*a*) Importance of the hand as organ of the mind. (2) Effect upon character of the child. (*a*) Growth of will through voluntary activity. (*b*) Self-reliance arising from consciousness of ability to do. (*c*) Concentration, attention, honesty of effort demanded. (3) The child is given opportunity to direct his efforts toward concrete ends which intimately concern his own life. (4) Training in reason and judgment in selecting and adapting means to end. (5) Training of the artistic sense in appreciation of form, symmetry, proportion. Adaptation of design to function.

III. The principles are: (1) Effort to find a working basis in manual training. (*a*) Course of technical exercises. (*b*) Course of useful models — illustration of these courses by various systems of manual training. (*c*) The real needs of the child, either in school or home. (*d*) The interrelation of hand-work and other school occupations as a basis. (2) The problem of so arranging work upon the last two bases mentioned that increasing motor power shall result. (3) Extent to which child's initiative shall be followed in selecting and designing things to be made. (4) The proper time in the child's life for most effective hand-training. (5) The kinds of movement which make for best motor training. (6) Degree of skill and accuracy which should be expected. (*a*) Basis for criticism of product.

IV. The use of number and geometry in manual training. (1) Demand for use of fundamental operations of number. (2) The ability to estimate magnitudes through constant measuring. (3) The demand for geometrical constructions.

V. The use of drawing in manual training. (1) Free-hand sketches.



Blotter Pad. Whitewood.

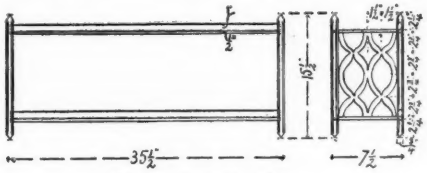
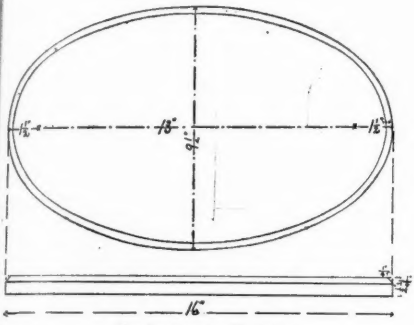
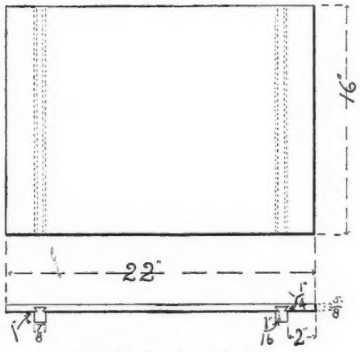


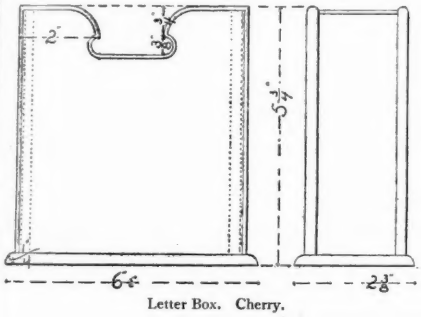
Plate Rack. Oak or Cherry.



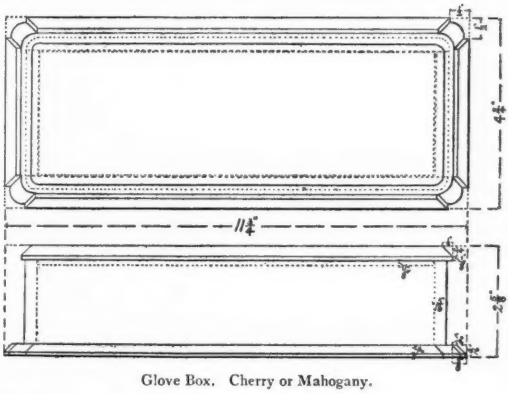
Cutting Board. White Pine.



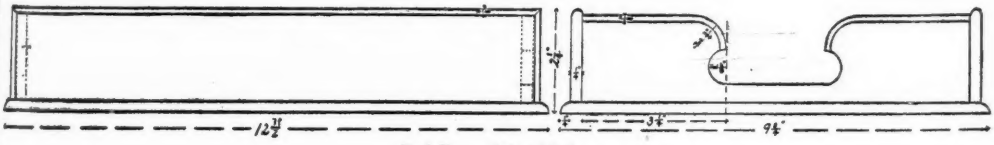
Drawing Board. White Pine.



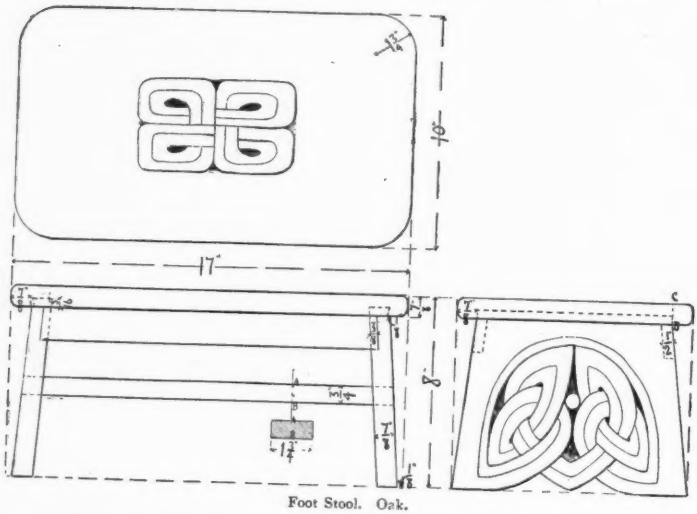
Letter Box. Cherry.



Glove Box. Cherry or Mahogany.



Desk Tray. Oak or Maple.



Foot Stool. Oak.

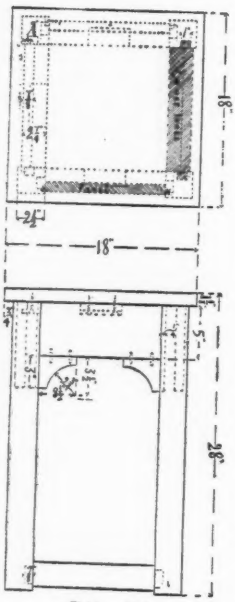
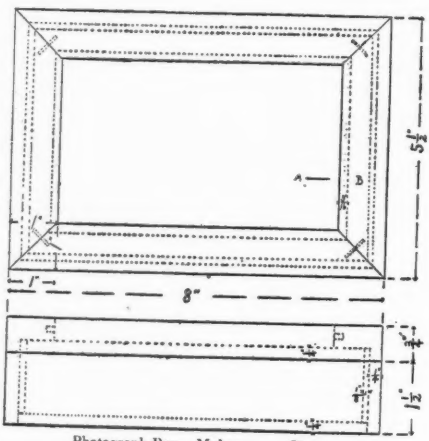
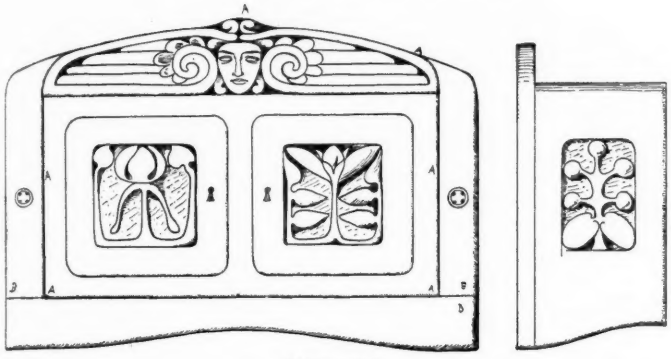


Table. Oak.



Photograph Box. Mahogany or Cherry.



Cabinet. Oak.

Main dimensions, 24" × 15" × 7½". The part marked AAA is sawed from one width of board. BBB is a framework around AA.

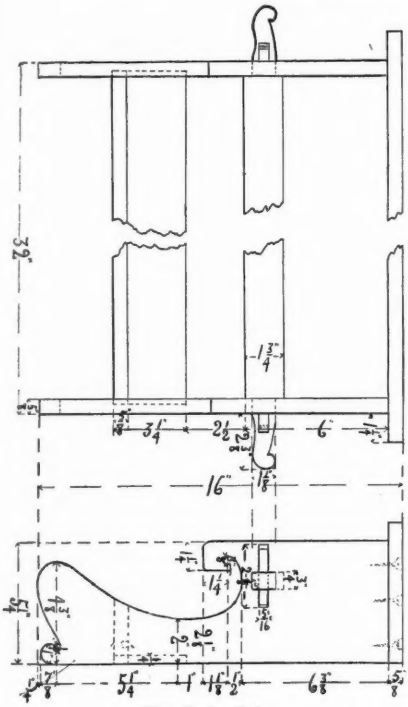
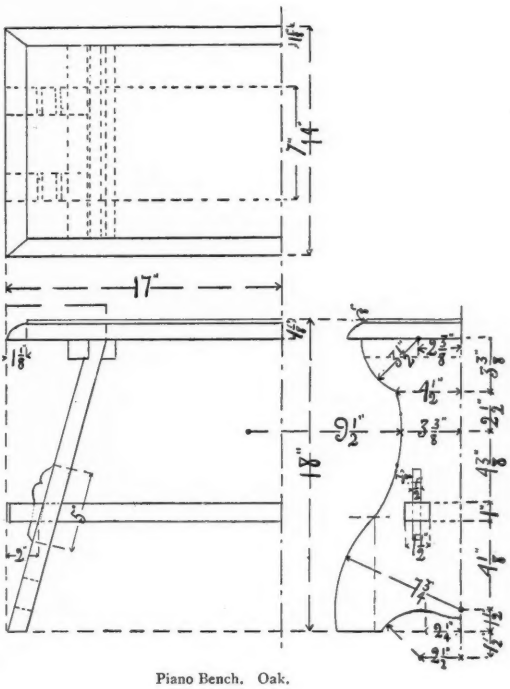


Plate Rack. Oak.



Piano Bench. Oak.

(2) Orthographic projection and its application to working drawings. (3) Geometric projection. (*a*) Principles of geometric projection. (*b*) Where this form of drawing is most advantageously used.

VI. Study of construction and design in wood. (1) Limitations resulting from structure of material. (2) Methods of construction best adapted to various purposes. (3) Beauty due largely to correct proportion and construction. (4) Kinds of wood best suited to various purposes.

VII. Ornament in woodwork. (1) Use of ornament. (2) The problem of suiting the ornament to the material, function, and construction of the object to be decorated. (3) Practice in decorative designing, in wood-carving, staining, and marquetry.

COURSE FOR PRIMARY GRADES.

The manual-training course for the primary grades will take up hand-work which can, to a great extent, be carried on in the ordinary schoolroom, with a small addition to the ordinary school equipment. The greater part of the time will be employed in actual work in the different occupations proposed for the course. The greatest emphasis will be placed upon the relations which the hand-work should sustain to the other school activities, especially in the primary grades.

Taking this point of view, we see that one employment of hand-work may be in constructing apparatus for carrying on other lines of work; another, in decorating the class-room or making it more comfortable; and a third field is opened in the use of constructive hand-work as a means of illustrative expression, in the same manner in which clay modeling and painting are used. The use of hand-work in this manner will be carefully examined and discussed.

The last and broadest field for the use of hand-work is in making the occupation itself the basis for a grade's work, and working from it as a center to those subjects which touch it intimately. This plan also will be illustrated and discussed.

In all the hand-work, the working out of the number and drawing connected therewith will be given prominence.

PHYSICAL TRAINING.

CARL J. KROH AND CAROLINE CRAWFORD.

GENERAL GYMNASTICS.[1]

CARL J. KROH.

THE practical work in general gymnastics embraces three distinct courses, as follows:

I. An elementary course designed to meet the needs of those primary and grammar teachers who are anxious to introduce gymnastics into their schools, and who would familiarize themselves with the best methods of conducting physical exercises.

II. A course arranged for teachers with experience in teaching gymnastics, and who are desirous to extend the scope of their work in the direction of greater effectiveness through a study of the progressive difficulties characteristic of general gymnastics and their adaptation under varying conditions.

III. A course for teachers and students qualifying for advanced work in all forms of gymnastics.

I. ELEMENTARY COURSE.

General and specific aims of elementary school gymnastics. Normal functional activity, health; symmetrical development; concentration of mind upon purposive action. An educational discipline.

Growth and development during the school age. Tendencies, as indicated in posture, standing, sitting, and walking; study of characteristic movement-forms. Analysis. Free exercises—an efficient means of body-building; fundamental to all gymnastic procedure. The cultivation of proper movement concepts. Preliminary steps in ordered procedure. Selection of appropriate movement-forms and exercises; development of typical and use of auxiliary forms. Order of progress as determined by perceptible results. Methods of illustration and direction. Use of commands.

Tactics.— Individual, group, and class practice, to facilitate concerted movement. Formations; positions; alignments. Modes of movement in and from place. Methods and order of division; distancing, and massing. Time—step, rhythm. Commands.

[1] The various courses outlined have been arranged with the purpose in view of facilitating the work in general. Attention is therefore directed to the distinctions made under general gymnastics and special physical training, designed for remedial purposes.

Free gymnastics.— Order of movement-forms and exercises constituting regular and complete outlines. Exercises for the improvement of bearing, carriage; the cultivation of poise. Active chest work; accentuation of proper lines of chest and back development. Emphasis of co-ordinative power; combined simple and complex exercises. Exercises to reinforce design of preceding work; to strengthen waist muscles. Running and springing exercises, designed as part of the regular lesson order. Exercises for moderating effects of preceding work. Respiratory exercises and their use.

The construction and adaptation of free exercises. Mechanical laws governing positions, equilibrium; gradation of muscular resistance in motion and locomotion. Weight, force, space; leverage. Age; sex; temperament. Estimates of condition, energy; control, skill.

Plays and games.[1]— Imitation games, based on sense-perceptions; for lowering reaction time between definite perceptions and actions; for ability to recognize advantages and to follow most practical procedure — reaction of one of several sense-perceptions through most practical action suggested. Games requiring quick discernment, judgment, action. Characteristic school games, for boys and girls.

Two courses; three weeks each. Time, 9: 30.

II. SUPPLEMENTARY COURSE.

Tactics.— Economy of movement; co-operation for definite purposes in (1) free gymnastics, (2) apparatus work, (3) games and plays, (4) tacto-gymnastic exercises and gymnastic dancing. Orders of formations, re-formations, and transformations, involving massing, distancing, and evasion, by stepping, marching, halting, and turning, according to fundamental rules.

Free exercises.[2] — Emphasis of distinct and progressive grade aims. Factors determinative in a selection of exercises; modifications of orders, form and kind—construction; appropriate demands in co-ordinate activities. Importance of movement-forms occurring in forms of applied gymnastics. Systematic practice of typical running and springing exercises, preparatory to elementary apparatus and field work. Movements and exercises in kneeling, sitting, lying, and stem-supporting positions. Tacto-gymnastic exercises. Dancing calisthenics.

Instruction; training.— Distinction between healthful, orderly, and pleasurable gymnastic training, formal drill and mere pleasurable activity for the sake of recreation. General effects of gymnastics upon school work; health. Comparisons of class and group work; general movement, mass work; control and attention. Suggested appropriate and interdicted forms of exercise. School and home gymnastics.

[1] For play-action in story form, descriptive action with music or song accompaniment, adapted to the smallest folks — see kindergarten courses.

[2] A review of the fundamental procedures represented in the adaptations of the elementary course will precede the work of this course.

Applied resistance.— Specific dumb-bell and wand exercises; extension exercises with elastic bands; use of balls, sacks, etc.; pole and ring exercises; Indian club-swinging exercises.

Elementary apparatus gymnastics.— Practical equipments. Methods of class work; group work. Gradation of pupils. Development of jumping, vaulting, and climbing exercises; uses of jumping apparatus, vaulting machines, vertical and slant ropes and poles; horizontal, slant, and vertical ladders, bars, etc.

School and field games.— Active, passive, and rest games. Games for the promotion of heart and lung action; active outdoor running games requiring most physical activity. Gymnastic plays for the cultivation of the play-spirit; pleasure in moderate action; short competitive games. Games requiring superior physical and mental qualities; the exercise of skill, dexterity, the qualities of endurance. Time, 11:30.

III. ADVANCED COURSE.

This course will present a survey of progressively arranged material under the following heads of general gymnastics: (1) tactics; (2) free gymnastics; (3) light gymnastics — hand apparatus; (4) apparatus gymnastics; (5) games, plays, sports; antagonistics; (6) athletics; (7) special work — fencing, etc.; (8) remedial work.

Under "tactics" is included a study of the relative positions and movements of the individual and the group; the composition of gymnastic marches and roundel figures.

In free exercises and tacto-gymnastics, as well as in apparatus gymnastics, the German method of conducting class and group work will be illustrated.

The development of the higher organized gymnastic games, with especial reference to their adaptability to all grades, will form a part of the regular program.

Athletics, outdoor exercises, field sports, antagonistics, will be considered with reference to their legitimate uses on the school grounds.

Defensive exercises, as fencing and boxing, preparatory to special practice, are included under I, II, and III.

Work designated assistive, resistive, co-operative, as physical work without apparatus, implies the reliance of gymnasts upon each other in the execution of exercises; assistance or resistance being required of one or the other, or several — according to the purpose intended. The substitution of pupils in lieu of gymnastic apparatus includes work under this head.

Æsthetic, "artistic" gymnastics find their highest expression in gymnastic compositions and "roundels," suggestive of interesting "themes." They include tactics and activities illustrative of definite gymnastic thought, generally accompanied by music or singing.

Fancy steps are derivations of the forms of exercise occurring under I and II, with rhythmic changes in execution. In their execution the body as

a whole participates, as in walking, gliding, skipping, hopping, bounding, etc. They are considered in their regular place in the order of adaptations.

Remedial work, a special form of work, is applied to defective and nervous children. As corrective work, it includes work for most ordinary defects, superinduced by forced durance in schools, etc. It consists of movements, free exercises, standing, sitting, lying; of assistive and resistive work, carefully adapted and prescribed with reference to individual needs.

The psycho-physiological order and pedagogical values of the work will be discussed and in a measure ascertained through demonstrations in class work. The study of new and complete co-ordination problems occurring in advanced free and light gymnastics, as well as apparatus work, will be based on the orders determined in these demonstrations. The practical means of determining individual needs and qualifications will be ascertained in the study of characteristic types. The values of physical exercises with reference to their classification and character, *i. e.*, as exercises of strength, dexterity, swiftness, endurance, attention, address, etc., will be outlined. Equipment plans for schools, playgrounds, and gymnasia will be presented, and the organization and regulation of gymnastics discussed. Time, 1:30.

MODEL-SCHOOL COURSE.

The grammar-grade work will embrace free-standing exercises, illustrating the different methods of gymnastic development. Appropriate procedures with references to demands, as warranted by the pupil's proficiency and power to follow gymnastic development, will be a distinct feature of the series.

The gymnasium work will be characteristic of work for boys as well as girls, and of work adapted to mixed classes. It will include free-standing, marching, and running exercises; ditto with use of hand apparatus, as poles, wands, dumb-bells, Indian clubs, sacks, etc.; also elementary-school gymnastics on apparatus, ladders, poles, rings, bars, etc.; the development of jumping and vaulting exercises on vaulting apparatus. Lessons in the gymnasium conclude with appropriate games and plays.

Teachers merely in quest of personal improvement and recreation, who wish to avail themselves of the opportunities offered in part periods of the supplementary and advanced courses, have the privilege of forming special groups and thus entering into the active physical training and recreative work of these courses. Participants are required to wear the regulation gymnasium costume, blouse and divided skirt (dark flannel preferred), for

ladies. All pupils, boys and men, must be provided with gymnasium slippers.

INDIVIDUAL GYMNASTICS, PRIMARY GYMNASTICS, AND DANCING.

CAROLINE CRAWFORD.

STUDY OF INDIVIDUAL CHILD.

FOR the general teacher, the problem in physical education is to become acquainted with the normal growth and development of the child, and also with the environment which will best promote that growth and development. The more definite such knowledge is, the greater its value becomes. General statements are often misleading, because the limitations that must be drawn in the application of such study to the biology of school life are not known. The present conditions under which physical training is taught are such that what might be accomplished directly through the training is thwarted by the school and home environment, which often tends to retard growth. The following outline is given as a guide for the work of the course. It is not to be considered complete. Certain parts will be emphasized, and other parts suggested for future study.

I. THE CHILD.

1. *Anatomy.*—(*a*) Skeletal anatomy, including the gross structure and arrangement of the bones and joints. (*b*) Muscular anatomy, including the larger muscles of the body, attachment and work.

2. *Physiological physics.*—(*a*) Measurement of force. (*b*) Action of gravity on body. (*c*) Levers of body. (*d*) Study of levers and applied power. (*e*) Standing. (*f*) Animal motion—walking, etc.

3. *Nutrition.*—(*a*) Air, quantity and quality. (*b*) Water, quantity and quality. (*c*) Food, quantity and quality. Amount of food for age.[1] The following table is given as a basis for study:

AGE.	PROTEID.		FAT.		CARBOHYDRATE.	
	Grams	Ounces	Grams	Ounces	Grams	Ounces
5 yrs.	56	2	43	1.5	145	5.1
8– 9 yrs.	57.44	2.05	45	1.6	150	5.3
12–13 yrs.	67.56	2.4	48	1.7	245	8.7
14–15 yrs.	79	2.8	48	1.7	270	9.6

[1] From UFFELMANN, *Domestic Hygiene of the Child.*

4. *Normal body for age.*—(*a*) Study of measurements. (*b*) Laws of growth and development. (*c*) Physiology of bodily exercise.

5. *Application of the laws of growth and development.*—(*a*) Work. (*b*) Fatigue. (*c*) Rest. (*d*) Recuperation.

6. *Physical defects.*—(*a*) Causes: in home life; in school life. (*b*) Effects: physique; retarded growth. (*c*) Remedies. The photographs in the April COURSE OF STUDY show defects which are both the result of the environment and also of the teacher's lack of appreciation of the effect of gravity on the body when standing and sitting.

7. *Standing.*—(*a*) Analysis of position. (*b*) Muscles used in standing. (*c*) Effect of gravity on body when standing.

8. *Position of body for motor work.*—(*a*) Reading. (*b*) Writing. (*c*) Singing.

9. *Sense organs.*—(*a*) Eyes. (*b*) Ears. Diagnosis of abnormal organs is not required, but the abnormal sense should be recognized, and means taken to have the best possible condition produced. As the throat plays so important a part in reading and singing, the same treatment applies to it as to the eyes and ears.

II. THE ENVIRONMENT—SCHOOL HYGIENE.

1. *Location of building.*—Soil.

2. *Seating.*—(*a*) Kinds of seats. (*b*) Measurements for seats.

3. *Heating and ventilation.*—(*a*) Air tests (see science outline). (*b*) Problems in practical ventilation.

4. *Lighting.*

5. *School diseases.*—(*a*) Contagious. (*b*) Chronic. (*c*) Nervous. Symptoms of chronic and nervous diseases. Contagious diseases are not under the teacher's care.

PRIMARY GYMNASTICS.

I. Games and plays adapted to children of the first grades.

II. Study of dance steps that little children can learn, and combinations of marching and dancing.

III. Greek sports. (1) Running. (2) Jumping. (3) Hurdling. (4) Vaulting. (5) Throwing.

DANCING AND GYMNASTIC DANCING.

I. Study of positions and steps.

II. Study of combinations of steps to form the dance.

III. Study of dancing for gymnastics. An opportunity will be offered all in this course for a daily practice hour under the direction of a competent assistant.

REFERENCES.

ANATOMY AND PHYSIOLOGICAL PHYSICS.

Gray, *Anatomy;* Morris, ed., *Human Anatomy;* Daniell, *Physics for Students of Medicine;* Draper, *Text-Book of Medical Physics;* Robertson, *Elements of Physiological Physics;* Marey, *Animal Mechanism;* Pettigrew, *Animal Locomotion.*

FOOD AND NUTRITION.

Atwater and Benedict, *U. S. Experiment Station Bulletin*, No. 69, "Experiments on the Metabolism of Matter and Energy in the Human Body;" Atwater and Langworthy, *U. S. Experiment Station Bulletin*, No. 45, "Digest of Metabolism Experiments in Which the Balance of Income and Outgo was Determined;" Atwater and Rosa, *U. S. Experiment Station Bulletin*, No. 63, "Description of a New Respiration Calorimeter, and Experiments on the Conservation of Energy in the Human Body;" Atwater, Woods, and Benedict, *U. S. Experiment Station Bulletin*, No. 44, "Report of Preliminary Investigations on the Metabolism of Nitrogen and Carbon in the Human Organism;" Faries, *Practical Training for Athletics, Health, and Pleasure*, pp. 71–81, "Food, Nutrition, and Digestion;" Farquharson, *School Hygiene and Diseases Incidental to School Life*, pp. 37–73, "Food: School Diet;" Foster, *Text-Book of Physiology*, pp. 379–886, "Tissues of Chemical Action with Their Re-Mechanisms;" Foster and Shore, *Physiology for Beginners*, pp. 128–51, "Digestion: Food;" Howell, ed., *American Text Book of Physiology*, pp. 215–306, "Chemistry of Digestion and Nutrition;" Huxley, *Lessons in Elementary Physiology*, pp. 143–68, "Food, Nutrition and Digestion;" Jordan and Hall, *U. S. Experiment Station Bulletin*, No. 77, "Digestibility of American Feeding Stuff;" Lincoln, *School and Industrial Hygiene*, pp. 19–23, "Food;" New York State Reformatory (Elmira), *Eighteenth Year Book*, "Dietary Studies," with tables and suggestions; Parkes, *Manual of Practical Hygiene:* "Food," pp 203–24; "Quality, Choice and Cooking of Food," pp. 225–90; "Beverages and Condiments," pp. 294–368; Pilcher, *First Aid in Illness and Injury*, pp. 70–76, "Digestion;" Richards, *Cost of Living as Modified by Sanitary Science*, pp. 65–81, "Food;" Thompson, *Practical Dietetics;* Uffelmann, *Manual of Domestic Hygiene of the Child*, pp. 13–109, "Food and Nutrition;" Waller, *Introduction to Human Physiology*, pp. 248–89, "Food, Nutrition and Excretion."

ANTHROPOMETRY.

Berthold, *Twentieth Year Book* of the New York State Reformatory, "Anthropology," tables of measurements; also tables of measurements in Appendix of *Twenty-first Year Book;* Galton, *Hereditary Genius*, "Heredity;" also *Natural Inheritance*, "Heredity;" Hall, *Changes in the Proportions of the Human Body During the Period of Growth;* New York State Reformatory, *Seventeenth Year Book*, pp. 1–45, "Physical Training Department," with tables of measurements; *Eighteenth Year Book*, pp. 152–81, "Short Notes in Anthropology;" also pp. 183–9, "Innovations During the Year," with tables of measurements; *Twenty-first Year Book*, pp. 140–50, "Physician and Physical Training Supervisor's Report;" *Mental and Physical Conditions of Childhood* (Committee on Report on Scientific Study of the); Oppenheim, *Development of the Child*, "Anthropometry;" Seaver, *Anthropometry and Physical Examination;* Uffelmann, *Domestic Hygiene of the Child*, pp. 1–12, "Anthropometry — Examination of the Child;" Warner, *Growth and Means of Training the Mental Faculty*, pp. 126–62; also *Study of Children*, "Anthropometry" and "Degeneracy," pp. 97–118, 238–50.

HYGIENE — PUBLIC, SCHOOL, HOME, PERSONAL.

Briggs, *Modern American School Buildings*, pp. 155–218; Burgerstein and Neolitzky, *Handbuch der Schul-Hygiene;* Burnham, *Pedagogical Seminary*, Vol. II, p. 67, "School Hygiene;" also "School Hygiene and Diseases" in Appleton's *Universal Cyclopedia;* Cohn, *Hygiene of the Eye in Schools;* Farquharson, *School Hygiene and*

Diseases Incidental to School Life; Fiske, *Bed Posture as an Etiological Factor in Spinal Curvature;* also *Hygiene of Instruction in Elementary Schools;* Gardener, *Town and Country School Buildings;* Massachusetts Board of Health, *Tenth Annual Report,* pp. 87–109, "Home Hygiene;" also *Thirteenth Annual Report,* and *Nineteenth Annual Report;* Newsholme, *School Hygiene,* pp. 3–11, 12–16, 21–45, and 116–30; Parkes, *Practical Hygiene;* Scudder, Special Report on Seating of Pupils in the Public Schools; Uffelmann, *Domestic Hygiene of the Child,* pp. 128–52; Woodbridge, *Report of Connecticut Board of Education,* 1898, pp. 337–64, "School House Warming and Ventilation."

LIBRARY ECONOMY.

IRENE WARREN.

THE aim of this course is to acquaint teachers with the most economical use of books and libraries, and to present enough of the principles of library economy to enable the teachers to organize and economically to administer their own school libraries. The class will meet every day during the last four weeks of the summer course. Students taking this course are advised to take the bookbinding also, although either may be carried separately.

Exhibits of books and material will be made during the course, and students are urged to leave sufficient time on their program for careful examination of the material presented. The following is a brief outline of the work:

I. *Preparation of books for the shelves.*—Marks of ownership. Labels.

II. *Accession book.*—A certain number of books will be assigned pupils to accession.

III. *Classification.*—The work will be based on the Dewey "Decimal Classification." Books will be given students to classify. The adaptation of the scheme to a school library will be discussed.

IV. *Cataloguing.*—The cataloguing will be based on the "New York State Library School Rules." Each student will be assigned a certain number of books to catalogue. The cards will be corrected and returned, so that each may have a small sample catalogue for future reference.

V. *Arrangement of books on shelves.*—Shelving. Accessibility to readers. Shelf labels.

VI. *Reference work.*—Use of reference-books. Dictionaries. Cyclopedias. Yearbooks. Periodical indexes. Bibliographies of special subjects. Preparation and distribution of bulletins and reference lists. Reference and reserve shelves.

VII. *Pictures, maps, and lantern slides.*— Collecting. Mounting. Marking. Cataloguing. Storing. Use in schoolroom.

VIII. *Children's books.*— Graded lists of books for children will be furnished each student. The best authors and illustrators will be discussed and various editions of standard works examined with a view to selecting the best for children.

IX. *Relation of the public library to the public school.*— Bulletins. Children's rooms. Traveling libraries. Traveling pictures. Home libraries. Librarian's addresses to teachers and pupils. Special privileges granted to public schools and teachers by public libraries. The Library Department of the National Educational Association. Courses of instruction in library economy and the use of books as offered in colleges, normal schools, and public schools.

REFERENCES: Baldwin, *Book-Lover;* Carnegie Library of Pittsburgh, *Graded and Annotated Catalogue of Books for the Use of the City Schools;* Koopman, *Mastery of Books;* Prentice, *Lists of Books for Third-Grade Teachers;* National Educational Association, Library Department, *Report for 1899;* Rice, *Course of Study in History and Literature;* Sargent, *Reading for the Young;* Spofford, *Book for All Readers;* see also the files of the *Library Journal* and *Public Libraries.*

MUSIC.

MAY ROOT KERN.

ILLUSTRATED talks on ear-training, rhythm, sight-reading, and, as a basis for all, song-composition, compose this course. Its aim is to enable the teacher to abandon in technical work the mechanical methods which produce mechanical results in the average pupil, and to furnish suggestions by which music may become of vital interest to the child. Illustrations showing the natural development of problems from this standpoint will be given, bringing out the opportunity for a drill which is not drudgery.

The child's own perception of his need for facility in writing out correctly or of reading quickly music which it is to his personal interest to write or read is indispensable to progress. He does not have this perception, if difficulties are chosen or created by the teacher and presented to him unrelated to any personal experience of his own. The very musical child is stirred emotionally by melody or harmony, and problems connected with these are vital to him; he works with interest to find their

solution. To the child whose musical development is slight, technical difficulties presented from without are overcome by a drudgery which is liable to extinguish the spark of interest originally present. To the unmusical child, problems in music are wholly unrelated. The teacher's task is to discover a common interest possessed by these three classes upon which to base his work with them. Song-composition furnishes this. An appeal to the dramatic impulse natural to the child arouses his interest, and music linked to this becomes vital to him. However crude the product, it is his own, and with but slight encouragement he will be ready to expend time and energy to acquire the knowledge necessary to putting it in permanent form—notating it. This work should be begun with children of about six years of age, before the period of self-criticism is entered upon, as precedent will carry them through that difficult stage. When the period of interest in skill shows itself—at about nine years of age—the device of song-composition need only occasionally be resorted to. Later it may be dropped altogether, except as the initiative comes from the children themselves, and a song for a special object or occasion is desired. At this stage melody-writing, which up to this point has been largely an untrammeled expression of the child, is subjected to criticism according to its principles.

This work will be illustrated by songs written by classes of children from six to twelve years of age.

FRENCH.[1]

LORLEY ADA ASHLEMAN.

THE work in French will be correlated with the colonial and local history outlined in Miss Rice's course for this term. In a simple dramatization of the trip of La Salle from Chicago to the Gulf of Mexico we shall stop off *en route* a little longer at Starved Rock (Crève-cœur). This memorable spot we shall visit, as it is within easy distance of Chicago, and from there we shall follow this explorer down the Mississippi to its mouth.

[1] This course will not be given during the summer term of 1901.

The simplest and best form of the language, containing many of the most important of its idioms, is included in the following little play, and grammatical construction will be analyzed when such analysis is necessary to the best understanding of the thought.

Atélier de Mlle. Prétun, au huitième étage, Fine Arts Building, Chicago. Petit dîner d'artistes. Le couvert est dressé sur une table ronde. Sur la table se trouve un service à thé, des viandes froides, saucisses de Francfort, jambon, petits-pains, radis, olives, gâteaux, fruits, bonbons. Les convives font cercle autour de Mlle. Prétun.

M. Vincent (regardant une belle poire qu'il a prise). Maintenant que nous sommes au dessert, reprenons le projet de notre voyage pour le mois d'août. (Regardant Mlle. Prétun, avec un sourire) Mademoiselle, qu'avez-vous à nous proposer?

Mlle. Prétun. J'ai une idée divine! Mais n'allez pas croire, au moins, que j'aie pu, même un instant, supposer que vous seriez tous de mon opinion (souriant). Je vous permets de discuter. Depuis deux ans mon frère ne parle que de ce voyage.

Mlle. Bertrand. Parlez-nous en.

M. Girard. Tout nous va, pourvu que ce soit en Amérique.

M. Tarnusky (plus bas à M. Girard). Ajoutez, mon ami, "et que ce ne soit pas trop cher."

Mlle. Prétun (offrant un bonbon à M. Tarnusky). Rassurez-vous. Ce que je vais vous proposer ne nous obligera pas de louer une mansarde à notre retour.

M. Lémon. Que proposez-vous donc, ma chère?

Mlle. Prétun (se levant). Voilà l'affaire (souriant malicieusement). M. Lémon, pouvez-vous me dire quelque chose au sujet de La Salle? Vous êtes notre encyclopédie. La Salle, où est-il né et où est-il allé lorsqu'il était jeune homme?

M. Lémon (vivement). Mais, voyons donc, mademoiselle; quel rapport y a-t-il entre cet homme et entre l'excursion que nous projétons? (Mlle. Prétun pose mystérieusement le doigt sur ses lèvres. M. Lémon se met à peler une belle pomme rouge.) Je crois qu'il est né à Rouen et qu'il est allé au Canada près de Mont Royale. C'est lui, n'est-ce pas, qui essaya d'arriver à la Chine par Ohio? Il a rebattit le fort Frontenac, et il me semble que c'est aussi lui qui battit le navire, Le Griffon.

(Plusieurs artistes prononcent en même temps) Quel homme!

M. Vincent. M. Lémon, je n'ai jamais vu votre pareil!

Mlle. Prétun (qui s'est assise). Oui; vous avez raison, M. Vincent. Eh bien, je continue (se tournant vers M. Craine). En quelle année a-t-il atteint Chicago, M. Craine?

M. Craine. Les dates, mademoiselle, ce n'est pas mon fort. Je crois que vous vous jouez de nous. La savez-vous au moins?

Mlle. Prétun (gracieusement). Mais certainement (riant). Je viens de lire sa vie. En 1681 il atteint Chicago. Le voilà chez nous!

Mlle. Camp (nonchalamment). Eh bien, alors; vous êtes joliment agaçante aujourd'hui.

Mlle. Prétun (malicieusement). Ce qu'on ne sait pas, n'est jamais très intéressant! (Se reprenant) Eh bien! La Salle s'embarqua sur la rivière Illinois, par laquelle il arriva vers la fin de décembre au plus grand village des Illinois, composé d'environ quatre ou cinq cents cabanes.

Mlle. Vincent (baillant). Ah, vraiment! Tu raffolles des Indiens.

Mlle. Prétun (reprenant avec une révérance comique à Mlle. Vincent). Je compte présenter au Salon un tableau de La Salle, le représentant au milieu du camp des Illinois après avoir trouvé le village désert.

(Tous les artistes s'intéressent vivement. Plusieurs se lèvent.)

M. Bombelle. Voyons, mademoiselle, comment passa-t-il au milieu de leur camp?

Mlle. Prétun. Il fit prendre les armes à sa petite troupe. Il rangea ses canots de front. Quand les Indiens ont vu les Français dans cet ordre, une grande confusion se fit au milieu d'eux. La Salle se laissa aller au courant jusqu'au pied du camp. Les Indiens, effrayés de cette audace, quoiqu'au nombre de plusieurs milliers devant une vingtaine de Français, implorèrent la paix et lui présentèrent trois calumets.

M. Vincent. Hum! assez beau sujet!

Mlle. Bertrand (montrant une pipe curieuse, suspendue au mur). Voilà un calumet, n'est-ce pas? Que signifie le calumet parmi les Indiens?

M. Lémon. Calumet vient du mot normand *chalumeau*, c'est une espèce de pipe très longue, enjolivée de picbois, de canards branchus, un oiseau dont la tête est de la plus belle écarlate, et d'autres brillants plumages. Les Indiens disent que c'est un présent que le soleil a envoyé aux hommes pour établir et pour confirmer la paix parmi eux.

Quiconque viole un calumet doit périre. Quoique le calumet soit le symbole de la paix, il sert néanmoins pour la guerre. Le calumet rouge est une marque qu'ils offrent au secours; les plumages blancs et gris signifient une paix profonde et du secours.

Mlle. Bertrand. Je vous remercie, M. Lémon.

Mlle. Prétun. J'arrive maintenant à mon deuxième tableau. La Salle avait un calumet lui-même, et lorsqu'il le montra les Indiens éclatèrent de joie, le reçurent comme un prédestiné. La Salle leur parla du vrai Dieu, leur paya du blé d'Inde et leur donna beaucoup de cadeaux. (Elle se lève et se dirige vers une carte suspendue au mur.) Regardez cette carte. Voici à peu près où se trouvait ce camp. Tout près d'ici La Salle remarqua une petite éminence qu'il nomma Crève-cœur.

M. Girard (d'un air étonné). Pourquoi ce triste nom?

Mlle. Prétun. On dit que c'était en raison de plusieurs chagrins qu'il avait éprouvés.

Mlle. Bombelle (avec intérêt). En savez-vous plus long, mademoiselle? Vous nous faites un cours d'histoire fort intéressant. Les Indiens, lorsqu'ils se trouvent associés à un Français, ne sont pas si mal.

Mlle. Prétun. Je suis "femme savante," aujourd'hui. Au mois de février il entra dans le Mississippi, trouva l'embouchure de la rivière Ohio, arriva finalement chez les Indiens Natchez, que le grand poëte français Chateaubriand a rendu si célèbres en les chantant, fit alliance avec eux, planta une croix sur leur territoire, ainsi que les armes de France. Il continua sa route et remarqua que le Mississippi se partage en trois chenaux. Enfin, au mois d'avril, il vit le beau golfe du Mexique, et il donna le nom de Louisiane à ces vastes pays qu'il avait découverts. Oui, mes amis, avec une poignée d'hommes, de fragiles esquifs, ayant seulement l'aiguille aimantée, les étoiles, le vent, mais surtout son géni, il fit une découverte devant laquelle avait echouée Ponce de Léon et Ferdinand de Soto. Nous pouvons bien nous écrier avec orgueil: Français, voilà ce que faisaient vos pères!!

(Tous les convives, se levant d'un commun sentiment) "Vive la France!"

Mlle. Prétun. Maintenant, je retourne à mes moutons. Louons un bateau (*house-boat*), faisons le voyage que La Salle a fait avec ses vingt Français. Chacun trouvera des points d'intérêt pour son art. Quand bon nous semble nous pouvons quitter notre bateau, faire des courses à l'aventure dans la campagne, les bois. Cette vie errante par ces beaux pays, à voir les levers du soleil, les crépuscules, les clairs de lune, ne sont-ce pas là des voyages de peintres? Nous pouvons être gais ou mélancoliques, exaltés lorsque le soleil se noie dans le Mississippi de nuages sanglants. Et, le soir, sous la lune qui passe au fond du ciel, nous pouvons songer à mille choses singulières qui ne nous viendraient point à l'esprit sous la brûlante clarté du jour!

Voilà un voyage idéal!

THE MODEL SCHOOL.

FLORA J. COOKE, GERTRUDE VAN HOESEN, KATHARINE M. STILWELL.

THE outlines of work presented are merely suggestive, and are subject to change to suit the conditions of the particular children attending the summer school. As these children are strangers to the teachers, the plans are based upon former experiences of the interests and power of children of corresponding ages, and upon the knowledge of the environment of the children to be taught.

DAILY PROGRAM FOR MODEL SCHOOL.

Hour.	Place.	Grade.	Teacher.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
1:20	Assembly Hall	1	Thomsen		Literature			
to	Assembly Hall	4	Thomsen	Literature			Literature	
1:50	Room 22	1	Kern	Music				
	Assembly Hall	4	Kern			Music		
	Room 22	1	Cooke				Games	
	Assembly Hall	1	Kern					Music
	Assembly Hall	4	Kern					Music
	Room 16	4	Mitchell		Textiles			
	Room 12	7	Kern		Music		Music	
	Room 12	7	Stilwell	Geography		Geography		Geography
1:50	Room 22	1	Cooke	Nature Study				
to	Assembly Hall	1	Cooke			Nature Study		Nature Study
2:30	Assembly Hall	4	Mitchell	Textiles				
	Assembly Hall	4	Mitchell		Textiles			
	Assembly Hall	1	Van Hoesen		History		History	
	Room 22	4	Van Hoesen			Science and Number		Science and Number
	Room 22	4	Cooke				Geography	
	Room 12	7	Stilwell	History		History		History
	Room 6	7	Norton and Stilwell		Cooking			
2:30	Assembly Hall	1	Van Hoesen					History
to	Assembly Hall	4	Van Hoesen				Science	
3:10	Room 22	4	Cooke			Geography		Geography
	Basement	1	Champlin		Sloyd			
	Basement	4	Champlin	Sloyd				
	Basement	1	Crawford			Gymnastics		
	Basement	4	Crawford		Gymnastics			
	Basement	1	Hollister	Art (clay)			Art (clay)	
	Basement	7	Kroh	Gymnastics				
	Room 12	7	Norton and Stilwell		Cooking			
	Room 12	7	Carley			Sloyd		
	Basement	7	Mitchell and Stilwell				Textiles	Textiles

Kindergarten, 8:30 to 10:30, Room 20, first floor; primary grades, 1:30 to 3:10, Assembly Hall and Room 22; grammar grades, 1:30 to 3:10, Room 12, second floor.

OUTLINE OF FIRST-GRADE WORK.

Clay modeling (Antoinette Hollister). — Pottery. The first-grade children will help prepare and serve a simple luncheon given to the children of the summer school at the end of the session. Their direct motive in the pottery work will be to model, decorate, and glaze the dishes to be used on this occasion, after which each child will be allowed to take his work home.

Nature study (Flora J. Cooke). — Simple comparison of city life with that on a farm, involving excursions to farms, grocery stores, livery stables, dairy

barns, etc. The children will observe the sources of the common foods and the various modes of preservation of foods. They will study and compare the food, work, and habits of town and country people, and of the domestic animals. In connection with this study the children will make the butter to be used in the school luncheon mentioned above. This work will require much supplementary reading, and the making of record books in which will be placed the children's individual plans, sketches, and notes, and the class reading lessons with the pictures taken upon the various field trips.

Industrial history (Gertrude Van Hoesen).— Clothing : From models the children will be allowed to select some simple, useful article which they wish to make of wool, linen, cotton, or silk. (1) A farm trip will be planned, during which they will see the shearing of sheep, and procure wool which they will wash, card, spin, dye, and weave into crude cloth. (2) Flax seed will be planted and allowed to develop as far as possible during the summer. They will also examine mature specimens of flax, and visit the flax exhibit in the Field Columbian Museum. They will spin and weave the flax into crude cloth. The same method will be pursued with cotton and silk, the live silk worms being procured if possible. Arrangements will be made for several Irish and Italian women to show them how thread is spun from different materials on both spindle and wheel. As the children probably will be unable to use the silk and cotton thread, the articles selected will necessarily be made of flax and wool, and, as each child will make but one finished article, he will contribute his unused thread to members of the class who need it.

Sloyd (Cora Champlin).— The children will make tools and apparatus needed in the work given above.

Number.— Number will be used to measure necessary quantities, and for the purpose of definite imaging in every subject.

Literature (Gudrun Thorne-Thomsen).— Fairy-stories and stories of invention will be told, dramatized, and illustrated by the children. The first grade will meet with the fourth and entertain them with story-telling and dramatic action.

Expression.— The oral reading and music will reinforce the experiences of the children, and attempt to stimulate them in wholesome action. Modeling, painting, drawing, and writing will be constantly used in all the work, the form of expression depending upon the nature of ideas to be expressed.

Music (May Root Kern).— Song-singing chiefly. Song-composition. Ear-training by means of single pitches or short phrases given by the teacher for imitation. Ascending scale with syllabus.

Gymnastics (Caroline Crawford).—The gymnastics will illustrate the work outlined in Course 5, under "Physical Training," and will consist of games and plays, dancing, and Greek games.

NOTE : Although the form work is not especially emphasized in these outlines, its importance is not forgotten, and in the discussions its use and value will be fully considered.

OUTLINE OF FOURTH-GRADE WORK.

From their experiences in home and school life, fourth-grade children are able to begin the study of the social necessities of a city, and to appreciate the work and workers that are essential to the welfare of a large community.

Geography (Flora J. Cooke).— In connection with the general question, they will devote the six weeks to the study of one kind of work that is being done in Chicago which affects all the people in it, *i. e.*, the water-supply system. They will probably discuss the subject under the following topics: (1) What is the source of the water used in the city? Why is the lake water used? (2) Study of simple geographical features of the city. (3) From pictures, reading, and descriptions of the teacher the children will prepare a simple map of Chicago. (4) Early history of the Chicago water supply. History since 1863. Story of the construction of the crib and tunnel. (5) Trip to a pumping station and reservoir. Study of its construction and possibilities. (6) Purification of water. (7) Relative purity of water in wells; of rain water; of other water used by the children. (8) Conditions will be presented in pictures which will show the topography of several river valleys and of selected mountain, prairie, and forest scenes. In each case the picture will represent the presence of water in some form. The children will be asked to select a site for a city, and supply it with water. Their plans will be criticised as to the probable excellence of the water and the expense involved in its transportation.

Science and number (Gertrude Van Hoesen).—Under this head another phase of the general subject will be considered, *i. e.*, the relation of good ventilation and of good posture to physical development. Among the points selected for discussion, study, and experimentation are the following: (1) Relation of lung expansion to lung capacity, individually and as a class. Effect of posture upon lung capacity. (2) Amount of air in the room occupied by the class. (3) The time necessary to exhaust the air. (4) Reasons for not re-breathing air. (*a*) Test for CO_2 — lime water. (*b*) Other sources of CO_2 — decay and combustion. (5) Best arrangement of windows to insure good ventilation; children will test for CO_2 in various parts of the room and arrange windows with reference to the results of these observations. (6) Children will state inferences which they are able to make from the data gathered in this work. (7) If time permits, they will also consider the interdependence existing between plants and animals in regard to CO_2.

Textile activities of Chicago (Clara I. Mitchell).—(1) Hand-work. Spinning of wool, weaving of small cushion-covers, bags, mats, and baskets. (2) Related history. Development of the textile industries of Chicago — fur trade; wool trade; basketry; weaving. (3) Related geography. Chicago as a wool market. Importation of textiles to Chicago; their sources and routes

of transportation. (4) Related science. Qualities of textile fiber; tests of fibers. Practical effects of mordants in dyeing. (5) Excursions to textile manufactories, dye-houses, wool markets, and shops.

Sloyd (Cora Champlin).— In addition to the apparatus which the children will make for use in the work outlined above, they will be allowed to choose for making a kite or boat. (See plans in manual-training outline in this issue.) Before beginning the construction each child will be required to perfect a working drawing of the object chosen. In this grade the plans are drawn to a scale.

Literature (Gudrun Thorne-Thomsen).—(1) Stories of children here and in other lands. (2) Dramatization of stories of the Vikings to be given before the other pupils of the school.

Expression.—Reading, writing, painting, and drawing will be used as in the first-grade work, but a greater degree of skill and accuracy in expression will necessarily be expected and exacted.

Gymnastics (Caroline Crawford).—See outline for first-grade work.

Music (May Root Kern).— Song-singing. Song-composition. Conscious work in rhythm. Review of 2, 3, 4, pulse measure. Drawing of same with circles on the board. (Introduction to drawing and writing by freedom of movement which may be ambidexter.) Notation in C and G scale. Significations of signature, rhythmic signs (notes), and bars. Notation of melodies orally given, consisting chiefly of broken triads. Sight-reading of simple, short melodies. Character of work will depend entirely upon the ability of the children.

OUTLINE OF SEVENTH-GRADE WORK.

History and geography (Katharine M. Stilwell).—To pupils of the seventh grade, not only our industrial and social, but also our political, life has a meaning. They have a personal interest in this larger life; they are a part of it. To direct this interest toward a better understanding of the needs of our community, and further to develop the social spirit, is the purpose of these lessons.

The subject is large; so the outline embraces more topics than can well be considered in one term. But the plan is flexible, and only such points will be discussed as seem best suited to the needs of the class in attendance. Different lines of investigation will be carried on by different pupils, and results of general interest will be reported to the class.

I. Location of Chicago. (1) On the Chicago plain. (2) On the continent. Compare with the location of ancient Athens and Rome.

II. Plan of the city. From the knowledge the pupils already possess, and with the aid of Rand & McNally's map of Chicago, the class will discuss briefly the general plan of the city. (1) Situation on the lake and the three divisions made by the Chicago river. Comparison of areas and populations in these divisions. (2) Location of the principal streets. (3) Location of the

business and trade centers, residence districts, and suburbs. Compare the value of property in each district. Why does it vary? Compare the plan of Chicago with plans of Washington and Paris.

III. Transportation system in use within the city limits. (1) Surface roads. (2) Elevated roads. (3) Suburban railroad service. Number of lines. How they are controlled. Compare with Boston and London.

NOTE: Questions on the preceding topics need not be answered at the time they are asked. They are intended to suggest lines of investigation.

IV. Size of the city. Its area; extent in different directions. How does the area compare with the population?

V. Occupations of the people. The class will visit some of the leading manufactories, grain elevators, the stock-yards, the lumber district, the docks, and the harbor.

VI. Geographical conditions that have contributed to the building up of Chicago. (1) Situation on the divide between the St. Lawrence and Mississippi basins. (2) Position on Lake Michigan. (3) Position on the continent.

VII. How man has modified these conditions. From a map of the Chicago area the class will study the topography of Chicago unmodified by human action. (1) Why did the earliest settlers come here? (2) What had they to do in order to live here? (3) Later developments resulting in present conditions.

VIII. How our city is governed. (1) Necessity of taxation; how taxes are levied; how the money is expended. (2) City officers — how these serve the public. (3) The city council and its duties. (4) The different departments — public works, building, police, fire, health, etc. (5) The city in its relation to the county. (6) The city in its relation to the state.

IX. Æsthetic and educational aspect. Schools, churches, social settlements, parks, theaters, museums, art galleries, libraries, architecture.

X. Compare Chicago with other cities — Florence, Venice, Paris. In what way can Chicago be improved? What can you do toward this improvement?

EXPLANATORY: Topics I–V, inclusive, are observation lessons to enable the pupils to view the city as it now is.

Topics VI–VII are suggestions to lead them to reason out the cause of the growth of the city.

Topic VIII deals with the political life of the city — based upon industrial and social conditions.

The object of Topics IX and X is to set the pupils to thinking about the æsthetic needs of our city, and to develop increasing appreciation of the essentials of civic beauty.

Cooking (Alice Peloubet Norton).—A party to be given to the other grades, at the close of the school, will furnish the motive for the cooking.

The children will suggest some things which they would like to serve; these will be talked over, and the most practical selected. Different methods of preparing them will be discussed, and experiments tried to see what ways are best. The food materials used will be studied, and the children, as far as possible, will make their own purchases.

Music (May Root Kern).—Song-singing. Song-composition. Notation of original songs in blank books (introduction of rests and accidentals). Drill in melody work and sight-reading. The chromatic scale will be introduced, and the work of the lower grades continued, but with increasing difficulties.

Hand-work (Clara I. Mitchell).—Selections from literature on the building of a city.

Making of booklets. Copying of selected bits of the literature chosen. Attempts at illumination. Lacing or binding of the booklets. Simple decoration of covers in drawing, water-color, needlework, or weaving.

Comparison of type and letters from specimens brought into class by the teacher or seen in shops and libraries.

Stories of the invention of printing; Gutenberg; Faust. Excursions to printing shops, libraries, and bookstores.

Physical training (Carl J. Kroh).—Grammar-grade work in the classrooms will embrace: free-standing movements and exercises, illustrating the different methods followed in gymnastic development. (Appropriate procedures with reference to demands, as warranted by the pupil's proficiency and power to follow gymnastic development, will be a distinct feature of the series.)

The gymnasium work will be characteristic of work for boys, as well as girls, and of work adapted to mixed classes. It will include free-standing, marching, and running exercises; the same with use of hand apparatus, as poles, wands, dumb-bells, Indian clubs, sacks, etc.; also elementary-school gymnastics on apparatus, ladders, poles, rings, bars, etc.; the development of jumping and vaulting exercises on vaulting apparatus. Lessons in the gymnasium conclude with appropriate games and plays.

Some time will be given to illustrate the adaptation of dancing calisthenics for children.

Manual training (Ira M. Carley).—The manual training will be related to the home life of the children rather than a direct outcome of the school work.

Each child will be allowed to make something to take to his home. As far as possible, the children will be given the choice as to what they shall make, taking into consideration the limitations of the time and of their own experience.

As suggestions to aid them in drawing, several pieces of work will be shown them, with the understanding that they are not necessarily to serve as

models, to be followed exactly, but as suggestions as to what may be done, and that, whatever may be chosen, the pupil himself will have scope to originate in design and decoration.

When each pupil has decided upon what he will do, a free-hand sketch of the object as he wishes it to look will be made, and from that a working drawing will be constructed.

The models prepared as suggestions are: book-rack, small hanging book-shelves, tray, plate-rack, foot-stool, easel, fire-screen, box, blotter pad.